


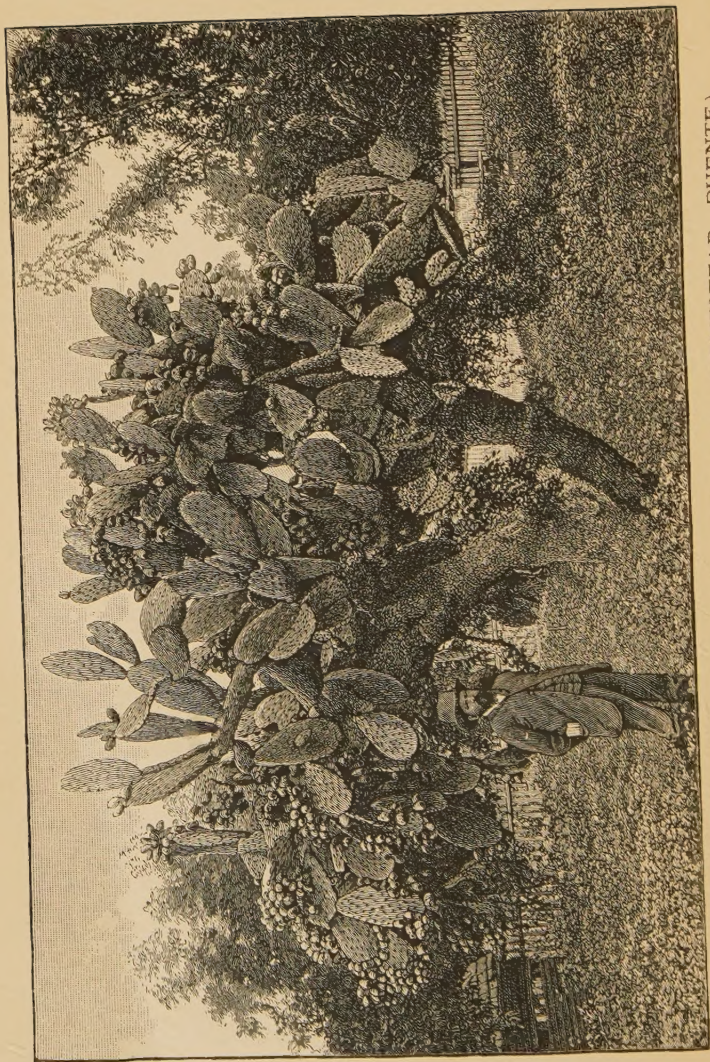
CALIFORNIA OF THE SOUTH



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CALIFORNIA OF THE SOUTH

ITS PHYSICAL GEOGRAPHY, CLIMATE,
MINERAL SPRINGS, RESOURCES, ROUTES OF TRAVEL,
AND HEALTH-RESORTS, BEING
A COMPLETE GUIDE-BOOK TO SOUTHERN CALIFORNIA

BY
WALTER LINDLEY, M. D.
AND
J. P. WIDNEY, A. M., M. D., LL. D.

WITH MAPS AND NUMEROUS ILLUSTRATIONS

THIRD EDITION
REWRITTEN AND PRINTED FROM NEW PLATES

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PREFACE TO THIRD EDITION.

Nearly eight years have passed since the first edition of this work was published. Nine months later a second edition was issued containing an appendix, but no change was made in the main body of the work. The remarkable growth of Southern California during the past seven years, and the exceptional favor with which this book has been received by the public, have induced the author to prepare this thoroughly revised edition, in which all facts relating to Southern California are brought down to the latest date.

In the closing months of 1887, when the first edition of "California of the South" was prepared, the remarkable real-estate boom which swept over Los Angeles and Southern California during the years 1886 and 1887 had just culminated. We did not see it then, but can see it clearly now, that the fall of 1887 marked the beginning of the end of that wild era of speculation which did much good as well as evil in pushing forward Los Angeles and the surrounding country within three or four years to an extent which they could not have otherwise reached in three times that period.

It was prophesied by many that after the subsidence of the real-estate excitement this section would relapse into a moribund condition. It might have been so in any other section of the United States, but the marvelous

resources of Southern California—the charms of its unique climate and the valuable products of its fertile acres—were sufficient not only to tide this section over the natural reaction from a period of crazy inflation, but to establish it on a path of still more remarkable and permanent progress.

After the real estate excitement was over a period of planting and building and general improvement set in, which has continued until the present time, growing in force from year to year. The census of 1890 gave the city of Los Angeles a population of fifty thousand. The population to-day is not less than eighty thousand. Three great systems of electric street railroads have been constructed, an ocean outfall and internal sewer system built, one hundred miles of streets graded and paved, buildings to the value of over twenty million dollars erected, and a good commencement made in establishing a manufacturing industry, to which the discovery of petroleum within the city limits has lent much assistance.

In the country the progress has been no less remarkable. On every hand orchards of citrus and deciduous trees have been planted by thousands upon thousands of acres. A beet-sugar factory which utilizes the product of five thousand acres of land is in successful operation. Boom cities which were laid out merely on a real-estate basis—such as Monrovia, Whittier, Fullerton, and others—have grown to be flourishing, productive centers of population. Towns which had scarcely had an existence when the first edition of this book was published—such as Pasadena and Redlands—are now cities with brick blocks, banks, and other appurtenances of modern business life.

The wonderful growth of Southern California during the ten years between 1880 and 1890 is told in a graphic manner by the figures of the United States census for those two years. Between 1880 and 1890 the counties of

California showed an average increase of population of 39.72 per cent. Of the fifty-three counties in existence at the latter date, twelve showed a decrease in population, while the highest percentage of increase shown by any county outside of Southern California was 64.90 per cent, San Francisco showing an increase of only 27.80 per cent.

Now, as against those figures, take the following remarkable record of the six southern counties (Riverside County not having then been formed). These six counties showed the following percentage of increase in population for the ten years:

	Per cent increase.
San Diego.....	305.98
Los Angeles and Orange	244.63
Fresno.....	237.90
San Bernardino.....	227.47
Ventura.....	98.52
Santa Barbara.	65.60

It should be noted that most of this remarkable advance was made during the closing half of the decade, from the middle of 1885 to the middle of 1890, when the census was taken.

It is evident to the most superficial observer that the progress of the past ten years in Southern California is but an index of that which is in store for this favored section. In no period of its history has the outlook for Los Angeles and Southern California been brighter than it is to-day. On every hand one sees activity, enterprise, progress. The eyes of many thousands in the East are turned to this promised land, and the immigration to this section of health, pleasure, and home seekers promises to be greater than it has been in any previous year since 1886, with the difference that those who come now do not come for the purpose of gambling in town lots, but of making for themselves productive homes, or, in the

case of those who have a sufficiency of this world's goods, of passing the closing years of their lives in a balmy climate where every day in the year a man may "sit under his vine and fig tree, with none to make him afraid."

It was for the purpose of giving authentic information regarding this much-talked-of section of the country to those who are thinking of coming this way, either for a visit or to reside, that *California of the South* was written. From the warm reception which it has received, the author believes that it has fulfilled its mission, and that the present revised edition will be welcomed by thousands who desire to learn the truth about Southern California as it is.

In the work of revising the book for the third edition I have been materially assisted by Harry Ellington Brook, of the editorial staff of the *Los Angeles Times*, author of the *Land of Sunshine* and other works on Southern California, which have had a wide circulation.

WALTER LINDLEY.

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PART I.

CLIMATOLOGY OF THE PACIFIC COAST.

By J. P. WIDNEY, A. M., M. D., LL. D.

Two Californias.

The American east of the Rocky Mountains has been accustomed to look upon the map and speak of the State of California as he would speak of the State of Ohio or New York. He is only beginning to find out, what the old Spaniard discovered long ago, that where he had spoken of one, there are two, a California of the North and a California of the South, and that these two, while possessing many features in common, are in many others totally unlike.

And with the settling up of the country, and the knowledge which comes of time and climatic investigation, these differences are found to be even more marked than at first supposed.

So unlike are the California of the North and the California of the South that already two distinct peoples are growing up, and the time is rapidly drawing near when the separation which the working of natural laws is making in the people must become a separation of civil laws as well, and two Californias stand side by side as distinct and separate States.

To a clear understanding of the differences which exist between the Californias and the eastern portion of the United States, and again of the differences between the two Californias when contrasted the one with the other, it is necessary to examine into the geographical, topographical, and climatic features which they possess in common as contrasted with the eastern shores of the continent, and again the features wherein they differ the one from the other.

The Pacific Coast of America as contrasted with the Atlantic Coast.

The Atlantic and Pacific coasts of the United States alike have a general trend, diverging as they go northward, from the axis of the continent. This is caused by the widening out of the land as it passes northward from the Isthmus. This trend gives to each coast a general southerly exposure to the sea, the one facing toward the southeast, the other toward the southwest. North of the boundary line of the United States this similarity ceases. Upon the Atlantic side the shore line retreats toward the west, north of Newfoundland, which projects like a great headland out into the ocean. In consequence of this recession of the land, the shore has here a northeasterly instead of a southeasterly exposure. Along the line of this shore the broad, deep channel of Davis Strait opens a great, unobstructed way from the waters of the Atlantic to the Arctic Seas.

Upon the Pacific side, instead of the falling back of the shore line, the divergence from the central axis increases until, at Alaska, the land faces boldly off toward the south. Instead, also, of a clear channel into the polar seas, that body of cold water is practically shut off, the narrow and shallow passage of Behring Strait admitting of only a slight communication, while another barrier in

the shape of the long transverse line of the Aleutian Peninsula and its continuing islands makes a wall between the colder waters of the north and the warmer waters of the ocean south.

In the mountain chains, also, a similarity and again a difference may be noted. Upon each coast in the southern portion a system of mountain chains follows the shore line at a greater or less distance inland. Upon the Atlantic side this system, the Appalachian, begins in northern Georgia, and extends continuously through the Carolinas, Virginia, and Pennsylvania, finally disappearing in northern Maine. It runs parallel to the coast, and at a distance of from two to three hundred miles inland. South of this line the land ceases, and the great heated body of the Gulf waters extends across the southern border of the continent, sending its modifying influence, borne by the Gulf winds, far inland along the open valley-way of the Mississippi. North of central New York the chain begins to break down, leaving the country open upon the north and west to the cold winds which sweep down from the polar seas, and from the great frozen plains which extend to the mouth of the Mackenzie. The northwesterly winds gather an increased harshness from the winter-chilled waters of the Great Lakes, across which they pass.

This Appalachian system is made up of mountains of limited altitude, ranging only from two to three thousand feet in height, and broken by numerous passes and low reaches.

Between these mountains and the sea lies a coast plain, broad, continuous, fertile, watered by many rivers, and broken by no transverse range of mountains.

Upon the Pacific coast, likewise, is a system of mountains running parallel with the coast, but much closer to it than the Appalachian upon the east. This Pacific coast system is made up of the Sierra Nevada, which in

different portions of its length is known by various local names, and the Coast Range. This system, unlike its analogue upon the Atlantic coast, is not shortened upon either the north or the south. Beginning at the southern point of the Peninsula of Lower California, in the latitude of Cuba, it follows the coast as a double range, the outer keeping near the shore, the inner at a distance of from one to three hundred miles; sometimes the Coast Range disappearing, again reappearing—the Sierra, however, always continuing as a practically unbroken chain; sometimes the two ranges coalescing, sometimes separating and inclosing between their two walls long, comparatively narrow valleys, which drain to the sea by breaks in the outer range; sometimes the outer range disappearing entirely for a space, leaving these valleys open to the sea as great coast plains.

The Coast Range has generally a narrow rim of plain at its base, cut transversely by numerous small streams and rivers which quickly reach the sea. This system of mountains extends as a continuous line from the peninsula of Lower California through California, Oregon, Washington, British Columbia, and Alaska, finally turning directly westward out the long Aleutian Peninsula.

Pouring out of the Arctic Ocean through Baffin's Bay is a great polar current of cold water, with a temperature but little above the freezing point, chilling, by its contiguity, the open plains of Labrador, and thus lowering the mean annual temperature of the northern Atlantic States and of Canada, which lie open to the winds sweeping southward from these colder regions. No range of mountains intervenes to break the force of these air currents, or to give shelter, the whole Atlantic slope north to the polar seas being practically one continuous open plain. South of Labrador the polar current is shot off to the mid-Atlantic by the prominent headland of Newfoundland, excepting, however, such smaller portion of

it as may pass within that island by the Strait of Belle Isle and down by the Nova Scotian coast.

The south end of the Atlantic plain has, on the contrary, its shore line constantly bathed in a current of warm water having a temperature of 86° , which comes from the heated tropic seas, and then circling through the Carribbean Sea and the Gulf of Mexico, emerges by the Strait of Florida and is deflected northward along the coast of the United States by the reefs and islands of the Bahamas. From these heated waters flow inland the warm, moist air currents which give to the South Atlantic coast its sultry heat. Yet this ocean stream, also, after a while, leaves the vicinity of the land, and passes seaward to the mid-Atlantic and on to the North European coast, in part carried by the line of its escape from the Gulf, in part deflected by the curve of the Florida coast, and by the projecting capes of the Carolinas.

Between these two deflected currents, the Gulf and the polar, is a triangle, having for its base the shore line from Cape Hatteras, in the Carolinas, to Cape Race, on the extremity of Newfoundland, and extending far seaward, the temperature of whose waters, controlled by no great ocean current, varies with the seasons—colder in winter, warmer in summer—and so serving less efficiently as an equalizer of temperature on the adjacent land.* Neither is there found upon the Atlantic coast the strong sea breeze or the on-shore trade-wind currents of the Pacific coast. As a result of these geographical

* The following table shows the winter and summer variations of sea temperature upon the Atlantic coast as compared with the Pacific:

	January.	July.		January.	July.
New York	33.3°	72.4°	San Francisco..	52.1°	59.0°
Savannah	49.9°	84.5°	Long Beach....	60.0°	$68\ 5^{\circ}$

features, the climate of the Atlantic coast presents great and well-marked variations, the North showing extremes of cold in winter, the South extremes of heat in summer, and this, too, with an atmosphere heavily charged with moisture—not simply within reach of the coast fog, but extending inland to the valley of the Mississippi.

The points of resemblance between the two coasts now begin to cease, for, while the Pacific shore has also its ocean current, it is one, rather than two, and it flows along the full length of the coast, with a temperature varying but little from the one even and moderate degree, whether winter or summer, or whether north or south. The Kuro Siwo, as it is termed—the great Japan current—flows from the tropics northward along the Asiatic coast, bathing the Japan Islands in its warm waters, and giving to them their mild and equable climate. Passing on northward, it is deflected toward the east in latitude 50° by the long chain of the Aleutian Islands, and then, striking the Alaskan coast, turns south, and so follows down the west shore of North America as a current, cooled yet not cold, for, instead of entering the Polar Sea, it is still, at the most northerly point of its flow, within the temperate zone. Neither does any cold polar current set out through the narrow and shoal Behring Strait to join it and reduce its temperature below the refreshing coolness which it gains in latitude 50° north. It is this current, together with the all-the-year on-shore winds of the counter-trades on the coast as far south as Oregon, and the strong daily sea breeze of the summer and the on-shore counter-trades of the winter, south of Oregon, which give the clew to the equable climate of the Pacific coast of North America.

Passing inland beyond the range of the sea breeze, this cool summer temperature is no longer found. On the contrary, the mercury will often show a heat in the day of 100° to 110° . Yet here another climatic law comes

in play to rob this high temperature of its danger, and, indeed, of much of its discomfort.

The hygrometer shows an atmosphere in these inland regions almost devoid of moisture, and, by the consequent rapid surface evaporation from the skin, bodily temperature is reduced and sunstroke almost unknown. Of the power of this evaporation to keep down bodily temperature, the writer has a vivid recollection during some weeks spent in Tucson, Arizona, some years ago. Just before the setting in of the summer rains, with the mercury daily at 100° and the atmosphere devoid of moisture, the surface of the body was dry, and the heat not in the least oppressive. Immediately upon the coming on of the rains, the daily temperature fell to an average of from 85° to 90° , but with an atmosphere laden with moisture, and the surface of the body was constantly bathed in the unevaporating perspiration, and the heat became almost unendurable. It is this absence of atmospheric moisture and its effects which make one of the great points of difference between the summer climates of the Atlantic and the Pacific slopes.

The explanation of this atmospheric dryness back of the immediate California coast line, and on to the interior during the summer, lies in the fact that south of Oregon the prevailing summer wind, except within the limited shore line reached by the sea breeze, is not from the sea, but is the regular off-shore trade-wind, coming from the great arid desert plateaus of the heart of the continent, and which, as it nears the coast, rises above the lower surface current of the daily ocean breeze, and flows continuously out to sea, until broken in the autumn, and beaten back by the shifting southward of the counter-trades.

Another important factor in the dissipation of excessive heat during the summer is the rapid radiation of the night which the atmospheric dryness admits of, and

which, in the more elevated regions whence the night wind comes, is increased by the lightness and rarefaction of an atmosphere with less superincumbent weight upon it. Under the workings of this law, upon these desert plateaus the day, with a temperature of 100° to 110° , is followed by night with a temperature so low as to require blankets for comfort and health.

The influence of the mountains in a comparison of the climate of the two coasts is an important item. Dwellers along the slopes or near the base of high mountain peaks know the cool night breezes which blow down their sides. The writer well remembers the rush of the great cold mountain wind which swept down the cañons of the Arizona mountains in many a lone night camp under the trees, the wind roaring through the long night hours in the pines overhead like the roar of some long-lost desert sea. The Atlantic coast, as already shown, has its mountain system back several hundred miles from the sea; but the mountains are of low elevation, ranging only from two to three thousand feet in height. The Pacific coast, however, is lined with ranges and spur-ranges whose peaks lift to elevations of from two to ten thousand feet, and snow-clad until the summer is well gone by. From these cold, snowy summits at night comes to the heated valleys below a continuous current, partly the natural mountain wind, partly the dropping down of the high trade-wind already mentioned, cooled by its passage over these great elevations, and hence the cool, refreshing nights which characterize the Pacific coast summers, as contrasted with the continuous day and night heat of the Atlantic slope.

Seasons.

The old division of the year into winter and summer, with which the Anglo-Teuton race has been familiar during the thousands of years of its migrations, becomes

upon the Pacific coast a misnomer, or the words must be taken in a new signification. The snows and the ice of its older homes become here the rains and the occasional light frosts of a climate in which winter and summer are supplanted by a wet and dry season. As already shown, the northeast trade-wind, which is the prevailing wind for the summer half of the year upon the whole coast south of Oregon, is an off-shore dry wind, coming from the high, arid plateaus of the heart of the continent. With it comes no rain. But as the sun retires southward in the autumn, this dry wind follows it, and the northwest counter-trade of the upper coast, which is an on-shore rain wind, and which, as the prevailing wind all the year round on the Oregon and Alaskan coast, gives to it the monthly rains, also follows the sun, and now takes the place of the dry trades upon the coast as far south as the peninsula of Lower California, bringing with it the rains which, from October to May, make of the winter of other lands the true summer or season of growth in this. Then, when the rains are over, come the summer months of other lands, but which here are the season when vegetation sleeps, and the land, where not irrigated, looks dry and bare.

A mistaken idea prevails often with persons who have formed their conceptions of a rainy season from the descriptions given by travelers in equatorial regions of the tropic rains, with their daily downpour and their appalling thunder and lightning. The winter rainfall of the Pacific coast, while in its northern portion in excess, and in the extreme south less than that in corresponding latitudes upon the eastern side of the continent, averages throughout Oregon and California much as in the Atlantic and Mississippi States.

Neither are the rainy months marked by violent and heavy rainfalls. From the middle of October to the middle of November the first rain of the season generally

falls, giving in the course of two or three days from one to three inches. Then, after several weeks of clear weather, comes rain again in the same manner. In the latter part of December what is called one of the heavy winter storms sets in, when, during a week or ten days of south winds and broken, rainy weather, a fall of from five to eight inches may be expected. January is generally marked by clear weather, with possibly occasional slight rains. In February or March another of the heavy storms may again be expected. Then the rains gradually grow less, until by May they have almost ceased.

The rains of the plains and valleys are accompanied by snows in the mountains, snow accumulating to a depth of many feet in the high Sierra, and to a less depth in the lower Coast Ranges. This snow forms the great storehouse of moisture for the summer streams, slowly melting and filling the various rivers during the rainless summer. Thunder and lightning are almost unknown. During the summer what is known as the Sonora summer rain current occasionally follows up the long chain of the Sierra, giving showers, with thunder and lightning, in the mountains, and at intervals of a few years even in the valleys. This current may at times last for a week, and during its continuance the weather becomes somewhat sultry, like that of the Atlantic States, but with the sea breeze, although for the time blowing with less force, to modify and temper it.

The summer along the whole sea coast is marked by night fogs, which set in after the spring rains check, and cease before the rains of the autumn begin. These fogs lift in the early forenoon, and by their humidity and freshness help to make the day cool and refreshing. The heat of the summer is not felt along the coast within reach of the sea breeze—a midday temperature of from 65° to 80° being the rule, varying with localities. Back

from the coast, in the interior valleys, where the fog does not penetrate, the midday temperature may, in exceptional cases, during a hot spell, reach 90° or 100° , or even 105° , but it is a dry heat, without the discomfort or the danger attending a like temperature in the Atlantic or Mississippi States. These hot spells, as they are called, may occur several times during the course of the summer, generally lasting for three days, when the mercury drops, and the normal coolness returns. Even during these hot spells, however, the night is generally marked by a rapid fall in temperature, so that sleep is restful and refreshing.

While the summer is marked by the regularity of the daily sea and land breezes, the cyclones and great wind storms of the Atlantic and Mississippi regions are here unknown.

Another and very marked feature of the Pacific slope, as contrasted with the Atlantic, is the great variety of climates found within comparatively limited areas. This variety arises largely from the difference in the mountain development upon the two sides of the continent. Upon the Atlantic slope, as already described, the one system follows parallel with the coast, but at a distance of several hundred miles inland, and is of moderate elevation, ranging only from two to three thousand feet, while no spur ranges reach out to the coast, and no coast range rises between the broad coast plain and the sea. Upon the Pacific slope the main chain of the high Sierra also follows parallel with the coast, at a distance somewhat less, however, ranging from sixty to two hundred miles from it. But instead of an elevation of only two or three thousand feet, it rises to from eight to fourteen thousand feet above the sea. Again, instead of the open coast plain, as upon the Atlantic side, comes a second line of mountains, the Coast Range, parallel with the coast and close to it. These two ranges, also, at several

points in their long line coalesce, and merge into great broken, upland mountain plateaus and Alpine regions. The resulting difference in the climate of the two coasts is very marked. While upon the Atlantic side the sufferer from the summer heat, or the invalid, must undertake a journey of many hundred miles to find even a moderately cool mountain air, upon the Pacific coast, if a resident of the warmer interior valleys, and not desiring to seek the seaside, within his sight are mountains where he may find any temperature ranging from refreshing coolness to night frosts or perpetual snows. So, too, in the Coast Range, are varieties of climates such as one would seek in vain upon the Atlantic slope. While upon the ocean side of the range are great forests where the giant redwood is bathed nightly in the dense, cool fog which seems to be essential to its growth, just across the summit are warm mountain slopes facing off toward the morning sun, their rolling hills green to the very crest with the olive and the vine; and yet from their sheltered warmth one may pass on for a few miles to some pass or gap in the range that is swept during all the summer months by the great, cool ocean wind as it rushes through to the heated interior.

Thus, there is scarcely a point in California where one within a few hours by rail has not his choice of a climate, varying from the heat of the Atlantic or Mississippi midsummer to the coolness of the White Mountains, or the perpetual snows of the higher Alps; his choice from a hot, dry air, as of the highlands of Arabia, to fogs and coolness, as of the west coast of Scotland; his choice from a stillness, as of the calm of the "hollow lotus-land," where no harsh winds blow, to other points swept by ocean winds which for months pour inland with the rush and the roar of a great aerial river. It is this infinite variety, lying back of the typical equability, which gives to the Pacific-slope climate its strongest charm, and

which makes it suit so infinite a variety of constitutions and diseases.

Topographical and Climatic Features in which the Different Portions of the Pacific Coast are unlike.

A stranger might infer, from the foregoing, that one common climate, with little variation, existed over the whole Pacific coast. This is not the case, however. Upon the coast line three distinct types exist, while a fourth is found back of the Sierra on the great inland plain. And these climatic differences are sufficient to make radical differences in agriculture, in commercial laws, in civil divisions, in health and disease, and in race development.

These climatic belts may be classified into—

1. The northern, which includes the upper coast from the great transverse coalescing of mountains near the upper line of California northward. In this division lie Oregon, Washington, British Columbia, and the immediate coast-rim of Alaska, and the long chain of islands which lines the coast.

2. The central, which includes California as far south as the eastward turn of the coast at Point Conception. Near this point transverse chains of high mountains separate the State into two distinct topographical and climatic divisions.

3. The southern, which embraces what is distinctively known as Southern California, and includes that portion of the State lying south of the transverse chains of mountains just mentioned.

4. The great inland plateau, lying between the Sierra Nevada and the Rocky ranges, and reaching from the Gulf of California on the south to the Polar Sea on the north as a continuous open plain, unbroken by any transverse chain of mountains.

THE NORTHERN BELT.

The first of these belts, that from Oregon northward, has three physical features, which are the key to the climate, viz.: the disappearance of the Coast Range which is found farther south, and the drawing near to the coast of the northern extension of the Sierra Nevada, which as a continuous, but here somewhat broken, and rather low range, follows near to the coast, and separates it from the inland plateau; a shore line closely hugged by the southward flow of the return current of the Kuro Siwo—an all-the-year on-shore wind current of the moist counter-trades.

The result is a climate which, while showing somewhat of the extremes of the high latitude, is yet tempered winter and summer by the constant inflow of the counter-trades, an air current rendered equable by the mild ocean waters over which it passes before reaching the land; yet, because of the lower and broken character of the range back, this coast climate receives through contiguity, and through irregular wind currents from the land, somewhat of the harshness of the inland plateau which is in its northern part a frozen polar plain.

This portion of the Pacific coast resembles in a marked degree, physically and climatically, yet in a more temperate type, the west coast of northern Europe, from and including the British Islands, and north through Sweden and Norway. This belt is marked also by an excess of moisture. Thus the annual precipitation at Sitka is one hundred and ten inches; at Portland, Oregon, fifty-three inches.

The all-the-year on-shore current of the counter-trades is, winter and summer, a rain current. While precipitation is heavier in certain months of the year, still no month is without its regular rains, its fogs and clouds. In the extreme north, or in the mountains farther south,

this precipitation is of course during the winter months, more or less, in the form of snow. While the portion of this belt north of Oregon is not marked by a deep soil, the abundance of moisture, and the always moderate temperature, stimulate a vigorous life of the hardier classes of vegetation, and hills and valleys are covered by a dense growth of forest, made up chiefly of fir and pine.

This is especially the timber belt of the Pacific coast, and is the great source of supply for lumber, which is shipped by sea to the various points of demand. Southward, the timber belt tends to retreat from the valleys into the higher mountains to secure the requisite coolness and moisture, except what is known as the redwood belt, which extends along the immediate shore line as far south as midway on the California coast.

This northern belt is the one also rich in coal and iron, both of which grow scant in quantity, and the coal poor in quality, farther south. The abundance of timber, coal, and iron marks this belt as the future manufacturing portion of the coast.

Its low mountain passes, easy grades across the continent, and abundance of good harbors, mark it also as one of the natural routes for transcontinental traffic. Already Puget Sound and the mouth of the Columbia are becoming terminal points for such trade.

Agriculturally, it is the belt of grasses, of rye, of oats, and of northern grains and fruits, and in its southern portion of the wheat plant, the potato, and the apple. The annual temperature is too low for corn.

Its seas, like those of the west coast of northern Europe, abound in fish of the most valuable kinds for food, such as the cod, the mackerel, and the salmon. Its fisheries are already of vast commercial value.

For healthfulness it ranks with the west coast of Europe; free from malaria, having the rheumatisms, the pneumonias, and the catarrhs of the north—a climate

healthful for moderately robust constitutions; because of its continued dampness, and its low but not excessively cold temperature, not to be selected as the resort of delicate persons, of invalids, of consumptives; the future home of a hardy, prosperous, seafaring, fisher, agricultural, and manufacturing folk, having the substantial elements for the building up of a strong, vigorous civilization.

THE CENTRAL BELT.

This belt, as before stated, includes California as far south as a line drawn from that prominent headland of the coast known as Point Conception, in a northeasterly direction to the mountains at the south end of the San Joaquin plain, thence following the curve of the Sierra as it turns northward, and on to Mount Shasta and the Oregon line.

This belt presents, as its topographical characteristics, an extensive interior valley—the Sacramento-San Joaquin—in elevation but little above the sea level, having its length from north to south, and shut in upon all sides by mountain chains except one narrow outlet to the sea. Upon the eastern side of this valley a lofty and continuous range, the high Sierra, shuts it off, and isolates it from the interior of the continent. Upon the west a lower chain of mountains, the Coast Range, walls it in from the ocean—this range splitting into two in the mid-California region, and inclosing between them San Francisco Bay and a series of smaller inner coast valleys. Upon the north and the south this Coast Range coalesces with the Sierra, thus shutting in the great interior valley of the Sacramento-San Joaquin from the northern and the southern belts.

Upon the ocean side of the Coast Range are numerous small coast valleys, each generally drained by a short water-course having a rapid fall to the sea.

The mountain development makes the central belt the most isolated and difficult of access of the three Pacific coast divisions. Upon the north are the heavy grades and the rugged mountains about Shasta. Upon the south the crests of the Tehachapi, crossed by the Southern Pacific at an elevation of 4,025 feet; while east of it and between it and the great interior of the continent runs the full length of the highest portion of the snow-clad Sierra with but few passes. The Central Pacific crosses this range on its way eastward at an elevation of 6,749 feet.

The Sacramento-San Joaquin Valley, which forms the greater mass of the agricultural land of this belt, is some four hundred and fifty miles in length by from seventy-five to one hundred miles in width. It is a level, untimbered plain, except in the foothills, with an elevation but little above the sea. The flat character of the plain, and the narrow outlet to the sea, make the river portions of the valley subject to severe floods in the winter.

Shut in from the sea breeze by the Coast Range, the extremes of both heat and cold are much more marked than upon other portions of the California slope of the Sierra.

Thus, the mean, average temperature of Sacramento for January is 46.6° ; for July, 71.2° ; at Visalia, January, 48.1° ; July, 80.8° ; at Los Angeles, January, 53.9° ; July 70.2° ; at San Diego, January, 55° ; July, 68.4° .

The winter rain currents, being from the south, have to cross the Coast Range of mountains to reach the San Joaquin portion of the valley, and in crossing are robbed of much of their moisture, giving at Visalia an annual rainfall of only 10.46 inches. The central and northern portions of the valley receiving the current which enters from the sea by the lower gaps about San Francisco Bay, have a much larger rainfall; thus, Sacramento reaches an

annual average of 18, while the northern portions range much higher, Red Bluff having 36.39 inches.

As a result, while the rainfall in the north is sufficient to insure constancy to agricultural returns, in the San Joaquin plain, and especially in its southern portion, the returns are much less certain. It is only a question of time, however, when this whole valley will be made to support a dense population. The high Sierra back of it, with its peaks ranging from ten to fourteen thousand feet in elevation, its heavy winter snows, and its great watershed, furnishes a summer flow of water which, when once fully utilized, will probably be sufficient to irrigate the whole plain. It is in this future development of irrigation, rather than in mines or commerce, that the true wealth of the central belt lies. Already extensive irrigation works are in operation, but the need is for a comprehensive system under some general plan and with proper supervision.

Between this valley of the Sacramento-San Joaquin and the ocean lies the broken and irregular Coast Range of mountains, with its rolling hills, and its many smaller valleys, notably the valley of the San Francisco Bay and its branches. These valleys are, as compared with the great interior Sacramento-San Joaquin basin, small in area yet marked by a high degree of fertility. They possess a more equable climate and a more reliable rainfall, which in the valleys facing south is sufficient, in the driest years, to mature grain—in the valleys facing the north, less certain. The low elevation of the Coast Range, and the absence of accumulated snow, make the streams of these valleys small and unreliable, so that extensive irrigation is not possible. In many of them artesian wells help to supply the lack, and are utilized for watering orchards and gardens.

The central belt, as a whole, is marked by certain characteristics peculiar to itself, as contrasted with the north-

ern or the southern. Lying south of the line of the moist, on-shore, summer counter-trades, it has an upper and controlling summer current, the continuous off-shore northeast trade-wind, blowing down from the arid plateaus of the interior of the continent. It is this current which gives to the central belt the rainless summer, and the dry, clear atmosphere for which it is noted. The excessive dryness makes the air seem, to one unaccustomed to it, even harsh. In this respect it is unlike either the northern or the southern belt.

The shore line, which keeps the general east-of-south trend of the northern belt, is still closely hugged by the return current of the Kuro Siwo. This current, still retaining the coolness of the Alaskan seas, is now in summer of a lower temperature than the land. The heating of the interior valleys gives rise, during the after part of each summer day, to a strong, surface-current sea breeze which, as the temperature of the land drops toward night, bears in a heavy fog, that envelops the shore line and the valleys adjacent to the sea. This wind, with its attendant fog, is especially marked wherever a gap is found in the Coast Range, giving easier access to the heated interior. It is the coolness, and the nightly moisture of these summer fogs, which draw the forest line well down the coast in northern California. To persons of delicate constitution—those who do not make blood and bodily heat rapidly—these keen sea breezes and the chill fog are very trying.

From the long plains of the Sacramento-San Joaquin come at times, more especially during the late summer and the autumn, hot, dry winds which are not found in either the northern or the southern belt. In the same way during the winter, cold, dry winds sweep from the now chilled surface of these plains, giving to the central belt the norther.

Climatically, then, the central belt shows less moisture

than the northern, an absence of summer rains, a dry, stimulating summer air, often marked by excessive heat—with, however, a cool, foggy coast.

Agriculturally, it is the home of the wheat, the barley, but not, except in certain warmer portions, of the corn; it grows the apple, the pear, the plum, the peach, the cherry, the currant, and with these the fig of southern Europe.

In a few sheltered spots in the foothills the orange and lemon have been grown for many years, but not in sufficient quantities to become an article of much sale in the markets. The vine finds a congenial home in all the interior, and through the coast counties, except in some of the more exposed localities. All the vegetables of the temperate zone are found. Herbage is annual, having its season of growth during the winter, drying up in the summer. It is a rich, fertile land, comparing with central and western France, but with less severe cold during the winter. It will be made to support a dense population, rather by agriculture than by manufactures or commerce.

Commercially, the central belt is less fortunately located than either the northern or the southern. It has back of it the longest lines of land carriage across the continent, the distance from San Francisco to New York being in the direct line twenty-five hundred miles, while from Puget Sound to ship navigation on the lakes is only fifteen hundred miles, and from Los Angeles or San Diego to tide-water on the Gulf of Mexico is only thirteen hundred miles. It has also back of it the highest grades and the heaviest snows of all the various transcontinental lines, for both the Sierra and the Rocky Mountains are highest in their central part. The Northern Pacific crosses the Cascade Range at an elevation of 3,980 feet, the Rocky Mountains at 5,873 feet. The Central and Union Pacific line from San Francisco crosses the Sierra

at an elevation of 7,017 feet, and the Rocky Mountains at some 8,242 feet. Yet the Southern Pacific line from Los Angeles to the Gulf crosses the Sierra at an elevation of only 2,560 feet, and the Rocky Mountain chain at 4,614 feet, and is practically south of the snow line.

The commercial supremacy which San Francisco, as the metropolis of the central belt, secured in the early days through the first rush of population to the mines of that region, is already passing away, the northern and notably the southern belts having developed trade centers of their own, and having now the commercial advantages which come of shorter lines, lower grades, and lighter snows, and also of productive interior routes across the continent, the central belt having behind it the most arid and barren portion of the great inland plateau.

In healthfulness, this central belt ranks, as in climate, with central France, but having many advantages arising from the milder winter and the dry summer. It will be the home of a healthy, vigorous race; yet to the invalid its coast winds have a harshness which is keenly felt.

For certain seasons, there are localities in the foothills of both the Coast Range and the Sierra which could hardly be bettered. The interior valleys show some malaria, certain portions decidedly so. Shut off as they are from the force of the ocean winds, the effect of the extensive irrigation, which is becoming a necessity, upon the development of malaria, is an open question. The coast and the coast valleys are almost entirely free from it. Apart from these sections which develop malaria, there can scarcely be said to be endemic diseases. The keen winds of the coast bring with them somewhat of neuralgias, subacute rheumatism, catarrhs, and some pneumonia, pleurisy, and bronchitis. The interior is quite free from them.

THE INTERIOR BELT OR PLATEAU.

Geographically and climatically, the Rocky Mountain range is ordinarily spoken of as the dividing line or ridge of the continent. There are reasons why it should be so considered. Under the name of the Andes in South America, the Sierra Madre in Mexico, and the Rocky Mountains in North America, it is the one continuous range which reaches from extremity to extremity of the continent in a practically unbroken chain.

East of it, all drainage is into the Atlantic and its connecting waters; west of it, into the Pacific and its connecting waters. At its east and west bases lie two great interior valleys.

They present some striking analogies. Each is separated from the ocean by a double coast system of mountains—the eastern by the Alleghanies and the Blue Ridge, the western by the Sierra and the Coast Range.

Each extends upon the north and the south to the waters of the sea, with no well-marked transverse range of mountains to break the long sweep of the ocean winds. Each also subdivides its watershed into three distinct portions, an upland central basin and two sloping plains facing respectively northward and southward to the sea. Each drains its southern plain by a great southward-flowing river, and each of these enters the ocean, not directly, but through a connecting gulf—the Mississippi by the Gulf of Mexico, the Colorado by the Gulf of California. Each has, or has had, in its central basin a great system of inland seas, and each drains its central basin by a large transverse river entering the ocean directly—the eastern by the St. Lawrence, the western by the Columbia. Each has upon the extreme north another great river draining its northern slope—the eastern valley having the Mackenzie, the western the Yukon; and here also, despite an apparent break in the analogy, it still in reality

holds true, for while the Mackenzie empties into the Atlantic indirectly by the line of the Polar Sea, and the Yukon apparently directly into the Pacific in that portion called the Behring Sea, yet in reality this sea, from its walling off by the long chain of the Aleutians, and by the Arctic change which comes to its shores north of these islands, belongs climatically with the polar rather than with the Pacific waters.

Both northern slopes are much alike. Each lies open to the cold polar winds; each has a harsh, inhospitable climate; each has a moderate rainfall; and each is but little known.

These are the analogies. They are largely geographical and topographical. Now begin the divergencies. They are largely climatic. The central basin and the southern slope of the interior valley lying at the east base of the Rocky Mountains belong with the great, well-watered, fertile river-valley systems of the world. Of such is the valley of the Amazon, of the Rio de la Plata, of the Congo, of the Ganges, of the Yang-tse-Kiang. They are, by the mere working of climatic laws, the natural home of a non-migrating population, and the seat of a fixed and settled civilization.

The central basin of the interior valley upon the west of the Rocky Mountains is in many respects the opposite of this. It belongs rather with the great arid uplands of the world. Only central Asia has its counterpart.

Like the uplands of Asia north of the Himalayas, its rain winds come to it wrung almost dry of their moisture by the high mountains which they must first cross. Then, too, the elevation, with its attendant rarefaction of atmosphere, leads to a rapid evaporation which desiccates the soil and stints vegetable life. It is the basin of that western system of inland seas, twin to the five Great Lakes of the eastern upland, but which, unlike them, dried up with some far-reaching change of climate in the ages long

past; only wave marks upon the desolate mountain sides and the surf-worn pebbles of old beach lines tell of the waters which once covered the broad plains—these, and the salt, and the alkali, and worn sea shells blown in the drifting sands, and the whitened bones of old marine monsters, and the silence, and the desolation.

The basin of this old inland sea, or seas—for no doubt it was an irregular chain rather than one body—included much of Utah and Nevada, portions of eastern Oregon and southern Idaho, and possibly some small portion of northwestern Arizona. The southern rim was probably that uplifted plateau through which, for four hundred miles, the waters of the Colorado force their way in the depths of the Grand Cañon. The northern rim might have been some of the low ranges about the headwaters of the South Fork of the Columbia.

Upon the map its southern boundary would be lined by the thirty-sixth and its northern by the forty-third parallels of latitude. It is the portion of the inland plateau corresponding to the central climatic belt as described upon the Pacific coast.

This basin of the interior valley has an elevation above the sea of from four to five thousand feet. A portion of its area is now drained by the head waters of the Colorado and its tributaries, a portion by the South Fork of the Columbia, and a portion has no outlet to the sea, but the waters of its streams are lost in the sands, or form shallow salty lakes, which maintain an unequal struggle with the rapid evaporation.

The southern slope of this interior valley includes Arizona and that portion of Southern California lying east of the Sierra. From an elevation of five or six thousand feet in the mountains of northern Arizona it drops gradually to two or three thousand in the upland valleys of central Arizona and upon the Mojave Desert, and down to the sea level as it approaches the Gulf of Cali-

foria, passing even to several hundred feet below the sea in the basin of the Colorado Desert.

The Colorado River, which for four hundred miles had flowed through the Grand Cañon at a depth of from four to five thousand feet below the plateau, now emerges upon the level of the open country, while the rivers from the mountains of eastern Arizona make well-defined streams running through fertile alluvial valleys, which at intervals widen out into broad plains.

The salt and the alkali of the central basin grow less noticeable under the better drainage of well-defined river systems reaching the sea.

Climate.

The central basin and the southern slope of this western interior plain of the continent may be best described climatically together, noting differences when found. In temperature the winters of the central basin and of the mountains of the southern slope are much like corresponding latitudes and elevations east of the Rocky Mountains—cold and harsh, with snows instead of rain. The winters of the plains of the southern slope are mild and pleasant. The summer temperature is high, often reaching 100° to 110° in the heat of the day, but with an atmosphere so dry that the heat is not oppressive. Spring and autumn give the perfection of an interior upland climate, especially in the settled weather of the southern slope. The spring months of this slope with the warm yet not hot days, and the gorgeous coloring of the strange desert plants as they burst into bloom, have a charm never to be forgotten by one who has lived the life of the plains.

The annual precipitation is from twelve to sixteen inches, in the central basin, and the mountains and plains of the southern slope, diminishing to four or five inches

as the level of the Gulf is reached in southwestern Arizona. The division into a wet and a dry season is not so clearly marked as upon the corresponding portion of the Pacific coast. There are two seasons of precipitation to each year, midwinter and midsummer, with threatenings of rain and often light showers through the intervening months. It seems to be climatically a kind of battle ground between the fixed wet and dry seasons of the coast and the all-the-year rains of the country east of the Rocky Mountains. It probably feels the effect of the edge of the Gulf currents which may readily cross the low elevations of those mountains in this part of their course.

Ethnologically, it is by natural laws, like similar regions elsewhere in the world, the home of the nomad, where man becomes migratory in character, traveling with his flocks and herds in search of fresh food as the scanty herbage of one spot becomes exhausted.

Yet this western interior valley of the continent has in it, especially upon that southern slope which includes Arizona and the region about the headwaters of the Gulf of California, infinite possibilities of development, and the capacity for sustaining a large population and a settled and well-ordered civilization. The traces of old irrigating canals, leading from the rivers out over the deep-soiled plains of central Arizona, show that the land once had such a population. With the more skillfully planned irrigating works of modern science, and the greater capital available, it will do this again, but on a much vaster scale.

The central basin, which includes Utah and a portion of Nevada, has less possibility of such development; the climate, owing to the greater elevation, is more rigorous; the drying up of the old inland sea, and the defective surface drainage, have left the soil much more strongly impregnated with salt and alkali; and the water courses are small and often deeply sunk in cañons below the

level of the surrounding country. Agriculture here must be in isolated spots, with the broad stretches of desert between.

But upon the southern slope, that portion including Arizona and the regions about the Gulf, all this is changed. The climate, while hot in midsummer, is but little more so than in the basin farther north, while the winters are free from harshness. While the rainfall, like that of the central basin, is insufficient to mature crops at any season unassisted by irrigation, yet the water-supply for irrigation is abundant and unfailing, and the great river valleys, and the plains bordering them, lie in the best possible shape for irrigation.

Two great valleys will be the especial centers of the future development. The Colorado River, one of the six great rivers of North America, after draining the west slope of the Rocky Mountains through Wyoming and Colorado, and that portion of Utah east of the Wahsatch Range, emerges from the mouth of the Grand Cañon as a broad, navigable river, to flow for four hundred and fifty miles more through a rich alluvial valley, before entering the head of the Gulf of California. At its lower end this valley broadens out and merges into a great alluvial plain of hundreds of square miles about the head of the gulf, and extending off into the Colorado Desert.

The land in this valley system which may be irrigated and made productive probably amounts to several thousand square miles, and, for sugar cane and other semi-tropic agricultural products, has probably no equal in North America. The river which is to water this region is at its flood with the melting of the Rocky Mountain snows in midsummer, when the needs of irrigation would be greatest. At the time of the summer floods the back-water from the river flows in a broad stream, called New River, at one point down the long slope into the Colorado

Desert, which is here below the level of the sea, thus giving a small section of land a wetting for a few days. In the summer of 1868 the writer crossed this stream sixty miles back from the main river, and passed through fields of a species of wild hemp ten and twelve feet in height, the growth of the one flooding.

Sixty miles above the mouth of the Colorado, at Yuma, it receives from the east as tributary the Gila River. This is also a broad, but not navigable river, which—draining the mountains of eastern Arizona and a portion of New Mexico, and, like the Colorado, having a midsummer flood—flows for three hundred miles directly westward across the middle of Arizona, having also a wide alluvial valley of the most fertile soil. From both north and south it receives tributaries which traverse similar long valleys, or rather from their extent to be spoken of as plains, which are of like fertility with the valley of the Gila. It is in these plains that the most extensive traces of the irrigating canals of some prehistoric race are to be found.

Already large settlements have been made in the valley of the Salt, the Gila, and their tributaries, and extensive systems of irrigation have been planned and carried out. It is only a question of time when the valleys of the Colorado, the Salt, and the Gila, and their tributaries, will support a population of millions, and rival the valley of the Nile in productive capacity. Besides sugar cane and cotton, which would no doubt do well, these valleys are the home of the wheat, corn, the melon, the vine, and the fig.

Besides these larger valleys, the mountains of northern and eastern Arizona are dotted with smaller valleys where from the elevation the rainfall is sufficient to produce crops of grain, and in which, and upon the adjacent uplands, are some of the richest grazing lands of the West. This is already becoming a noted cattle country. While upon scouts in 1867-'68, the writer passed through

many of these smaller valleys where the natural growth of grass was more luxuriant than in any Ohio valley meadow. The mountains were covered with a growth of pine, oak, and black walnut.

This southern slope of the western interior valley lies opposite the southern climatic belt upon the coast.

In healthfulness it ranks with the desert interiors of the world. Practically free from endemic diseases, except in some low and badly-drained valleys which have a certain amount of malaria, its value for tuberculous affections is only beginning to be appreciated.

The central basin, with its harsher winter climate, while markedly salubrious in many respects, shows more of a tendency to the development of inflammatory affections of the lungs and air passages.

THE SOUTHERN BELT.

At Point Conception, in latitude 34.30° , the Pacific coast, for the first time in its long course from Alaska southward, makes a decided change. Abandoning the general east-of-south direction, which it has held for two thousand miles, it now turns and bears off almost due east. Rounding the point, all at once the helm of the southward-bound steamer is put hard a-port, and, leaving behind her a foamy wake which is almost a segment of a circle, her prow turns toward the sunrise.

The writer vividly remembers, after all these years, his first trip down the coast, when it was, as yet, all new and strange to him. As we rounded the point at the lighthouse, and entered the Santa Barbara Channel, almost in a ship's length we had run out of the fog and had entered into the sunshine. The cold north wind, which had been whistling through the rigging and chasing us down the coast for three hundred miles, died away. The rough sea calmed to a glassy swell. And as we sailed on,

hour after hour, over a summer sea, I realized that I had entered into that Southern California of which I had heard. What seemed to me then almost like the working of a magician's spell, is now, after these years of climatic investigation, no longer magic, but only the working out of natural laws.

With the change in the direction of the coast line come other changes.

The Sierra, which, from Alaska south, follows the general trend of the coast, turns also from its northerly and southerly course, and now, as a great transverse range, runs directly eastward, walling in the country from the north, and then, turning southward again with a great curve, walls it in again upon the east.

The land which in northern California faced off westward to the sea, now faces southward toward the sun.

The Kuro Siwo, which, from the Aleutian Islands south along the coast of Alaska, of British Columbia, of Washington, of Oregon, and of northern California, hugged the shore line closely, is now shot clear of the land by the prominence of the cape, and with the sharp turn of the coast eastward never approaches the shore line closely again.

This separation of the Alaskan current from the land is still further helped by the presence of a long chain of islands which, beginning with the Island of San Miguel, just south of Point Conception, follows the coast at a varying distance of from twenty-five to fifty miles as far south as the Lower California line, and incloses a sheltered and comparatively shoal channel. Within this channel, instead of the cold waters of the northern current, is a slight return current of warmer water flowing up the coast from the south.

With the change in the direction of the coast comes a change also in the character of the interior. The type of the central belt, as already shown, was a double mountain

range, the Sierra and the Coast, including between them, and almost entirely shut in from the sea, the Sacramento-San Joaquin plain, which contained the greater portion of the agricultural land of that belt.

The same general type is continued in Southern California, but with a marked modification. The Sierra still continues to wall in the country from that great arid upland which makes the heart of the continent, only changing its direction; but on the other side the Coast Range no longer continues to shut it off so completely from the sea. This Coast Range begins to break down, and at times entirely disappears, leaving the whole interior more open to the sea. This interior plain in Southern California is made up of the long reach which includes the San Fernando Valley, the Pasadena country, the valley of the San Gabriel River, the Whittier foothills, the Pomona and Ontario uplands, the valley of the Santa Ana River, in which lie Colton, the San Bernardino country, and Riverside, and then the long plains of the San Jacinto River southward. Unlike the inland plain of northern California, it is very irregular in outline, branching out in many directions, and often merging, almost insensibly, into rolling upland *mesas*. This plain, with its irregular windings, is about two hundred miles in length, with a width varying from fifteen to thirty miles. It is smaller than the corresponding interior valley of northern California, but the reverse is the case with regard to the coast plain. Instead of the narrow rim which makes the ocean frontage outside of the Coast Range in the northern portion of the State, in Southern California an extensive plain faces the sea, having a length of about a hundred and fifty miles, and a depth varying from fifteen to twenty-five miles. This does not include the long valley of the Santa Clara and San Buenaventura Rivers, which fronts on the ocean for some thirty miles, with a depth of about seventy-five, nor the Santa Barbara plains. Between this

coast plain and the long interior valley, the Coast Range of mountains, instead of the continuous chain which it presents in northern California, is broken, and, opposite the Los Angeles plains, for a space entirely disappears. The whole country—interior valley system as well as coast plains—becomes thus a great open coast land facing the south, and with the high Sierra for a background.

The area of the plains of Southern California is really largely increased over their apparent size by the rolling, hilly uplands into which, in many directions, they merge. This is especially the case in the country which lies between the San Fernando Valley and the lower Santa Clara Valley, and also in the great upland which rises from San Jacinto toward the south in San Diego County. These uplands have a rich, deep soil, and are well watered by numerous small streams.

The Sierra, which, north of the so-called Mojave Desert, makes a great curve westward around the south end of the San Joaquin plain of the central belt, turns southward again opposite Santa Barbara and Ventura Counties, and, doubling back upon its course, walls in the west end of the desert, then, turning directly eastward, separates the desert from the Los Angeles and San Bernardino plains. Turning southward again, it stands as a wall between the Colorado Desert and that portion of Southern California lying west of its base. The range varies in height from five to seven thousand feet, with peaks reaching from eight to eleven thousand feet. While maintaining this great elevation it yet develops one feature which it does not possess opposite the central belt. It breaks down at several points into low passes between the coast and the interior of the continent. The pass by which the Central Pacific, on its way eastward from San Francisco, crosses the Sierra is, as before given, 7,017 feet in elevation. Yet the Soledad Pass by which the Southern Pacific crosses the Sierra in Southern Cali-

ifornia is only 2,822 feet; the Cajon Pass by which the Atchison and Topeka enters is about the same height; and the San Gorgonio Pass, by which the Southern Pacific crosses on the road to Galveston and New Orleans, is only 2,560 feet above the sea. There are numerous other comparatively low passes through the Sierra at the west end of the Mojave Desert, leading toward the sea in Ventura and Santa Barbara Counties, and also through the range south of Santa Gorgonio. These passes through the southern Sierra have a marked influence, not only upon the climate of the coast portions of Southern California, but also upon that of the deserts lying at the east base of the Sierra. Their influence upon the future trade development of the coast will be noted under a different heading.

The Mojave Desert, lying beyond those passes which open northward, has an area of several thousand square miles, with an elevation above the sea of some two thousand feet. The Colorado Desert, which lies opposite the passes leading eastward, is somewhat less in area, and has a portion of its surface three hundred and fifty feet below the level of the sea.

The channel islands are eight in number, stretching along the coast for a hundred and fifty miles. Six of these are of considerable size, varying from twelve to twenty-five miles in length and from five to ten miles in width.

Rainfall.

The division of the year into a wet and a dry season is found in the central Pacific belt, and applies also to the southern belt. The counter-trades of the North Pacific coast, following the sun southward in the autumn, reach the coast of Southern California shortly after the rains have begun in the northern portion of the State.

The first rain may come anywhere from the middle

of October until the middle of November. A south wind comes in from the sea; clouds bank up along the southern horizon, and then about the mountain tops, and broken, rainy weather, lasting for several days, follows, during which time the precipitation amounts to from two to three inches.

The first rain may also give snow in the mountains, but not always, nor to any great depth.

After three or four weeks of clear, pleasant weather, comes another rain, much like the first, and this time generally with a decided snowfall in the mountains, as the temperature is now showing the winter coolness.

These rains wash the atmosphere clear of haze and dust, and it now begins to display the remarkable transparency for which the winters of Southern California are noted. Mountains a hundred miles away seem only distant a morning's ride.

With the coming of the rains the land begins to turn green after the repose of the rainless summer, and soon hills and plains are covered with the richest verdure. There is a peculiar and, to the eye of the writer, exceedingly pleasant shade to the green of the annual vegetation of the Pacific coast. Without professing to be an expert in the description of color, he would speak of it as a mingling of yellow, producing a light yellow-green rather than the darker blue-greens of vegetation upon the Atlantic coast.

About the latter part of December may be expected one of the heavy winter storms. Setting in with a strong south wind from the sea, rain begins to fall, and for a week or ten days more or less constant cloudiness, with rain a portion of each twenty-four hours, will be the rule. The rainfall is apt to be limited to the afternoon and night, leaving the morning free. This storm may give from six to eight inches of rain. In the mountains it is precipitated in the form of heavy snow, the tall peaks and the

continuous range being clad in white from the highest crest almost to the level of the open plain.

January is generally a month of clear skies. To many persons this is the pleasantest portion of the year. An atmosphere absolutely freed from all impurities, cool, and yet free from all harshness, so that it comes to the lungs like the exhilaration of the purest ether; a warm sun flooding from morning to night plains that have the green of the early spring of other lands; nights cool enough for a light frost on the lowlands; and the mountains, as far as the eye can reach, a great uplifted bank of the purest white. The writer remembers yet, after twenty years, his first glimpse of the land as he lay, all one long, sunny, January morning, on the steamer at the San Pedro anchorage.

In February another storm, like that of December, may be expected; then scattering rains, of two or three days' duration, at intervals of several weeks, through March and April, and the rainy season is over.

A mistaken impression prevails, even among people on the northern Pacific coast, who are sometimes most ignorant as to the amount of rainfall in Southern California, and the reason for the mistake is very apparent. The general law of the rainfall over the coast is of a steadily diminishing precipitation as one goes southward. Thus, the rainfall at Sitka is 110 inches per annum; at Portland, Oregon, 53 inches; at San Francisco, 24 inches; at Visalia, 10.46 inches. The natural inference would be that, as Southern California lies still farther south, the rainfall would be proportionately still less.

But now comes in play the working of another law, to which allusion was made in speaking of certain valleys in northern California which face fairly toward the south—the increased rainfall which results from a direct southern exposure with a high background. The coast of northern California, with its direction of slightly east

of south, faces at an acute angle toward the winter rain current, and only receives a portion of its force, while its mountain ranges, with the same general trend, receive the current at a slant. The full force of the rain current is thus only partly received by northern California, while the mountains act only imperfectly as condensers.

As an illustration of the working of the law may be given the valleys about the Bay of San Francisco. Thus, Sonoma Valley, facing the south, receives a rainfall nearly one half greater than Santa Clara Valley, only a few miles across the bay which faces toward the north. The working of the same law is seen in the excessive rainfall about Shasta, at the northern end of the Sacramento Valley.

It is the working of this second law which, in Southern California, brings the rainfall up again to the average of places much farther north. The average of the rainfalls at Los Angeles, running through a series of years, varies but little from that of Sacramento, and yet they are separated by four hundred miles in the north and south line, while Visalia, lying midway between, has, under the working of the general coast law, a rainfall of but little more than half as much.

In Southern California, owing to the sharp turn eastward made by the coast and the mountains, the whole country faces at a right angle to the winter rain currents from the south, while the broad coast plain upon the sea, and the breaking down of the Coast Range as before described, admit the full sweep of the storm. Then comes the high Sierra, which makes the background of the country, standing like a huge wall directly across the line of the rain current to condense and wring out of it the fullest amount of moisture before it scales the rugged heights, and passes on to the inland plateau.

The annual average rainfall at Los Angeles is eighteen inches along the base of the mountains, back of the plains, it is from thirty to forty inches. No record

has been kept farther up in the mountains, so that the precipitation of rain and snow is not known.

Fogs.

In common with the whole Pacific coast the shore line of Southern California has, from May to September, the night fog. This fog comes rolling in from the sea about sunset, or two or three hours later, and disappears shortly after sunrise. It is free from the chill and harshness of the fog on the colder upper coast, and is a refreshing feature to the climate, while its effect upon vegetation is very marked. It is a virtual atmospheric prolongation of the rainy season for the immediate coast. It only extends a few miles inland, so that persons who dislike the moist air live farther from the sea.

Atmospheric Humidity.

The question of the amount of invisible moisture in the air, apart from the visible moisture which comes in the shape of rain or fog, what is technically known as atmospheric humidity, is an important one for the transient invalid tourist as well as for certain types of constitution among more permanent residents in a country. The variations in humidity at a few points in the United States may be shown by reference to the Reports of the United States Signal Service. At New York it is 72 per cent; at Salt Lake, 44; at San Francisco, 76. On a more southern line, it is in Florida an average of 75; at New Orleans, 79; at Yuma, 43; at Los Angeles, 68; at San Diego, 71.

In portions of Southern California farther away from the sea, as in the foothills, in the San Fernando Valley, or any portion of what was described as the interior coast valley of Southern California, the per cent would probably drop to 60; while upon the Mojave upland or in the Colorado Desert it would average about as at Yuma, or even

drier. At no other point in the United States is so great a range in humidity to be found within a comparatively limited area as in Southern California, as all of these variations are to be reached by rail within three hours' ride. This fact has proved of exceeding importance in the management of the various shades of invalidism, as one has at his command, without the fatigue of a long journey, his choice of the cool, damp air of the sea, or the warm, dry air of the interior, a choice only to be found elsewhere by traveling thousands of miles.

Sunshine.

Following the same lines across the continent for comparison, the average number of cloudy days per year is found to be at New York, 119; at Salt Lake, 88; at San Francisco, 79. On the more southern line, average for Florida, 51; at New Orleans, 97; at Yuma, 14; at Los Angeles, 51; at San Diego, 85. The average through the inner valleys of Southern California, away from the immediate vicinity of the sea, would probably be about 40, while upon the Mojave or in the Colorado Desert it would rate with Yuma.

Winds.

The feature which most impresses the observer upon the Pacific coast in his study of the winds is their regularity. He feels that while the wind may blow "where it listeth," yet there is a law to the listing. He soon learns that "fickle as the winds" is a saying which here loses its force. He knows that at certain seasons there will be a prevalence of wind from a certain quarter, and that at a certain time of each day the wind will rise. He knows that a persistence of the wind from a certain quarter will bring a very moist atmosphere and rain, while the current from another quarter as surely means clear, cool

weather, with a moderately humid atmosphere; and from yet another quarter means an exceedingly dry atmosphere; cold in winter, hot in summer.

Probably in no other portion of the world does climatology approach more nearly to the standing of an exact science than upon the Pacific coast. One gets, as it were, behind the scenes, and sees how Nature manages her wheels and pulleys in the ever-shifting panorama of the seasons.

While the whole Pacific coast has much less really calm weather than the Atlantic coast, yet the records of the Signal Service show that the total wind movement is less; in other words, in a given length of time there are more hours of wind, but of less velocity. It is a region of more continuous wind currents, but of a milder character. The brisk sea breeze is diurnal; the gale rare; the hurricane and the cyclone unknown.

The winds may be classified into the trades and the counter-trades, which regulate the seasons;

The land and sea breeze, which regulate the daily temperature; and

The norther, which may come either winter or summer, and which is rather a law unto itself.

The working of the trades and the counter-trades has already been explained in this article, but it may not be amiss to repeat somewhat.

The counter-trade is an on-shore rain wind from the Pacific, which persists winter and summer upon the coast from Oregon northward, growing heavier with the advance northward, until its maximum force and rainfall are found in southern Alaska. Farther northward it seems to lose its force, and the rainfall diminishes again.

The northeast trade-wind is an off-shore, dry current, found in the daytime more in the upper regions of the atmosphere, passing out to sea above the lower stratum of on-shore sea breeze, dropping down at night in all proba-

bility nearer the earth, and adding force to the off-shore night land breeze. If proof were needed in addition to the well-known law of the trade-winds, of its persistence in the daytime, it is shown by the columns of smoke which often, during mountain fires, ascend some thousands of feet with a sharp slant from the ocean, and then turn and float horizontally out to sea. The same fact is shown by the showers of ashes and cinders which will at times drop down by the seaside, falling through the on-shore sea breeze when the fires which must have produced them are far inland in the mountains.

This dry, off-shore trade-wind is during most of the year the prevailing wind of the southern portion of the peninsula of Lower California, hence the almost rainless character of that climate.

Along that portion of the coast lying between the all-the-year rainy, on-shore, counter-trades of the North Pacific, and the almost all-the-year off-shore and rainless northeast trades of the peninsula, the winds follow the sun in its annual changes, the dry trade advancing northward, and the rainy counter-trade retreating before it in summer; then with the return of the sun southward in winter the rainless, off-shore trade-wind retreating southward, and the rainy counter-trade following it down the coast. Hence, the regular semi-annual alternation of these two great wind currents, and hence, also, the regular alternation to this portion of the coast, as before shown, of a wet and a dry season.

The daily sea breeze, which is characteristic more especially of the California portion of the Pacific coast, and which is caused, as before shown, by the heating up of the land in the interior plains, and the consequent rarefaction and rising of the air, with the rushing in of the cooler and heavier current from the sea to replace the ascending column—this sea breeze as found in Southern California has some marked differences when contrasted

with the breeze as found in northern California. It is less violent, and it is free from the harshness which characterizes it farther north; it also reaches more generally throughout the interior. The lessened violence is accounted for by two facts, the more open character of the country, and the greater proportionate area of the sea plains as compared with the interior valleys. In northern California the shore line is closely followed by the Coast Range of mountains. This range averages several thousand feet in height, with only here and there a break or a pass to the interior. The current of cool ocean air, rushing in from the sea to that heated interior, finds its way through these breaks, and like the current of a river—for this is only an ærial river, and observes the same laws—carries the violence of its narrowed current far inland before the contracted volume dissipates itself in a gentler flow. Hence the violent winds of many points upon the coast of northern California, the Golden Gate at San Francisco being a well-known instance. The lack of a coast plain exterior to this Coast Range of mountains also has its effect, as the in-rushing current is not thus tempered and robbed of a portion of its violence before reaching the breaks in the range.

In Southern California, on the contrary, a broad ocean plain first receives the ocean wind and tempers it as it comes from the sea; then instead of having to make its way through a few narrow passes in the Coast Range to reach the interior, it finds that range broken down, and at times, as for a number of miles eastward from the city of Los Angeles, disappearing entirely. This change in the character of the Coast Range allows of a broad, free entrance for the wind to the interior, and the broader current, like the broader channel to a river, means a gentler current.

This same fact of the broader inlet for the sea breeze through the Coast Range in Southern California explains

its better distribution throughout the interior than in the northern portion of the State. Instead of the violent in-rushing current sweeping by those portions not lying directly in its path, and leaving upon either side, and behind the adjacent mountains and hills, a hot, stagnant air, the gentler, broader inflow eddies around each projecting point, and into each connecting valley, cooling all with its freshness.

The lessened harshness of the Southern California sea breeze, apart from the influence of the broad coast plain, is to be accounted for also by the deflection of the down-coast cold current of the Kuro Siwo seaward at Point Conception, and the warmer inshore waters of the long Santa Barbara Channel over which this wind passes before reaching the shore. The sea breeze is thus, even before reaching the shore, robbed of much of the ocean harshness.*

This sea breeze sets in for the season as the cool spring months pass by, and through the whole summer, and late into the autumn, by ten o'clock of each day its refreshing influence is felt, a gentle wind blowing constantly until evening. Then by midnight the wind changes, and through the latter portion of the night and the early morning the land breeze blows down from the mountains, bringing the cool air of their high summits. This is a cool, dry, bracing air, unlike the wind that comes in from the sea. It has to it the scent of the sage lands of the desert.

The norther is, owing to the topographical configuration of the country, less felt in Southern California than in the northern portion of the State. The valleys, which there run north and south, and so lie open their whole

* The temperature of the sea at San Francisco is, for January, 52.1°; for July, 57°. At Long Beach, near Los Angeles, it is, for January, 60°; for July, 68 5°.

length to the sweep of the wind, owing to the change in the trend of the coast, run east and west in Southern California, presenting their narrow diameter to its sweep, while a like change in the direction of the mountain chains places these great uplifted walls directly across the pathway of the wind instead of parallel to its course, as in northern California. While the great area of the country is thus sheltered on the north, there are local exceptions. The low passes, which have been mentioned as leading through the Sierra, admit here and there a stray sweep of the north wind, which at such points cuts across the plains with a channel almost as well defined as the banks of a river. Such wind belts, while not common, are yet locally well known, and are an interesting feature in the climatology of the country. The north wind, whether felt in the winter or the summer, has a dry harshness peculiarly its own; and yet, apart from this harshness, it is not an unhealthful wind—rather, indeed, the contrary.

The sanitary value of these constant wind movements along the whole California coast can hardly be overestimated. The stagnant, lifeless air of the heated spells of the Atlantic slope or the Mississippi Valley is here an impossibility.

Temperature.

A table of temperatures must be studied very carefully in a comparison of different countries, or an entirely mistaken impression may be received as to the climatic contrasts. Thus, take the annual means alone as a basis of comparison. Two points may lie upon the same isothermal line, each with a mean annual temperature of 60° . We may suppose the one to have a winter temperature of 20° , and a summer temperature of 80° . Its mean for the year would be the sum of these divided by two, or 50° for the year. The other might have a winter temperature of 45° ,

a summer of 55° ; its annual mean would also be 50° . Yet in the former locality only the hardy trees and shrubs of the north would survive the cold of the winter, and the land would be buried in ice and snow; while in summer the mortality tables would show frequent deaths by sunstroke. In the latter, fuchias and geraniums would bloom in the door-yards the year round, and sunstroke would be unknown. The one is an equable climate, the other a climate of extremes, and yet the average is the same.

In actual practice the mean of each month is taken, and the sum divided by twelve to give the annual average; but, to show the fallacy which may underlie the result, the illustration as given above is not amiss.

In a table of comparisons, to avoid the tedious comparison month by month, a result sufficiently accurate may be obtained by giving, in addition to the mean annual average, the means of a typical winter and a typical summer month, as January and July.

If, in addition to these, the daily range of temperature, derived from a comparison of the night and the day observations, be given for the same months, a comparison sufficiently accurate for ordinary purposes will be attained.

This daily range is important, as one climate—such, for instance, as that of the Mississippi Valley—may during the summer maintain a continuously high temperature night and day, allowing of no refreshing sleep to the invalid; while another, as at many points upon the Pacific coast, although showing a nominally high daily average, may yet have comparatively cool nights.

The climate which is most conducive to health in the well, and which will prove best adapted to the restoration of health in the invalid, is that which, while affording the sunshine and the warmth of the day, and thus tempting to life in the open air, will yet be marked by a fall of temperature at night sufficiently great to admit of that

refreshing sleep which comes where the protection of a blanket is necessary to comfort.

The following table gives, from the Signal Service reports, the temperature statistics of a number of well-known points upon both sides of the continent. The Florida record is an average from the four stations which the Service maintains in that State:

	Annual mean.	Average.	Average.	Daily range.	Daily range.
		January.	July.	January.	July.
New York.....	51.3°	30.0°	72.6°	13.2°	15.6°
Salt Lake.....	51.1	27.9	74.4	15.2	25.6
Sacramento.....	61.3	47.6	73.4	18.0	25.2
San Francisco.....	55.7	49.3	58.8	8.1	12.7
Florida.....	72.7	60.7	83.3	15.5	14.0
New Orleans.....	69.4	55.9	83.0	18.3	12.8
Yuma.....	72.0	52.8	91.4	29.1	29.4
Los Angeles.....	60.5	52.0	68.2	21.5	28.3
San Diego.....	60.5	52.8	66.9	19.0	14.6

While the table shows an average of temperature for the coast line in Southern California, taking San Diego as a fair average among such points as Long Beach, San Pedro, Santa Monica, Ventura, and Santa Barbara, and for the line midway between the coast and the interior plains as represented by Los Angeles, yet there are many and well-marked variations from these averages. The coast points differ among themselves: some a little milder than the average, as San Pedro, which, while standing upon the seashore, is yet peculiarly sheltered from the ocean wind; others, through exposure to a stronger wind current, averaging a little colder.

So, too, farther inland will be found low, cold soils, with frost sufficiently severe almost every winter to interfere with the culture of semi-tropic fruits; other belts where frost is never known, and where the tomato ripens its fruit every month of the year, and the banana flourish-

es. Back in the sheltered foothills and in small interior valleys, again, are found localities where the mercury in the middle of a hot summer day will range up to or above 100°; while across the Sierra, on the Mojave and Colorado Deserts, is found the dry, intense heat of the inland plateau.

In the winter, among the mountains and upon the higher plains of the Mojave, may be found the ice and snows of the north-lands.

This varied range of temperatures, within a comparatively narrow territory, offers a wide choice to the invalid in his selection of a home.

Agriculture.

In the early days of Southern California the thought that it could ever become an agricultural country seems hardly to have entered into the minds of its scattered population of *rancheros*. The land was looked upon as only fit for grazing. The writer well remembers hearing the old residents of those days gravely argue that agriculture could not be made to pay; and they were proving the sincerity of their belief by importing from abroad the vegetables which they had upon their tables, the flour for their bread—everything, in fact, but the meat from their flocks and herds. Potatoes came by the sack, cabbages packed in crates, apples and other fruits by the box. And yet this was only twenty-five years ago; and now great train loads of these products, raised from the soil which was pronounced only fit for a cattle range, leave daily on all the lines of railroads for export, while the waters of the harbors are dotted with sea-going ships which fill up with cargoes of wheat, barley, wine, raisins, and all kinds of dried and canned fruits, for every part of the world. The climate, the land, and their possibilities, were simply not understood.

The average American, the man whose ideas of farming were formed amid the summer rains and the corn-fields of the Mississippi Valley, had to learn over again how to farm; and, now that he has learned the lesson, is growing rich on the land which was deemed comparatively worthless.

The early farmers had to begin their agricultural education in the new land by forgetting the word *winter*, and, instead of plowing and planting in the spring of the year, as they would in the East, seeing to it that their grain was put in with the coming of the early autumn rains. This lesson once thoroughly learned, no further difficulty was found in making grain farming a success.

A mistaken idea has prevailed to some extent among people in the East that farming is only carried on in Southern California by means of irrigation, and that without it crops would be a failure.

For all small grains and winter crops irrigation is not employed. These are cultivated just as they are in the Mississippi Valley or the Atlantic States, and need only the regular rains of the winter and spring, or wet season, to mature them. Corn, however, which is a summer crop, planted after the rains are over, is in many localities irrigated, yet in many other sections the natural moisture of the soil is sufficient to mature the crop without irrigation. Upon many of the lands, after a winter-sown crop, raised without irrigation, has been harvested, another crop is raised when the rains are over, by means of irrigation, and thus the land does double duty.

In many places land will be seen which is never free from a growing crop from year to year, except during the few days when plowing for the new planting. Where water from the rivers is used, the sediment held in suspension constantly renews the fertility of the soil over which it is spread. There are sandy lands about Los Angeles which have now been cropped for three quarters

of a century, with no apparent diminution of fertility. Water is also used, to a certain extent, in the great orchards and vineyards on the uplands and about the foothills. It is found that a limited quantity of water, given at the time when the fruit is swelling, makes a better quality, yet it must be used with discretion, as too much injures the quality. The tendency is, year by year, to the use of less water, it being found that, with thorough cultivation, the soil retains its moisture so well that irrigation is, upon many of these lands, unnecessary, and upon others less needed. In many sections are large bodies of moist lowland, called by the Spanish *cicuegas*, and extending often for miles, which are natural pasture lands, green all the year round. These are found to be especially adapted to dairying, and are with each year more and more devoted to that purpose. Such lands generally lie near the sea, and have the benefit of the heavy sea fogs at night through the summer, and the cool ocean winds during the day. The same lands are well adapted to the cultivation of corn and the Northern fruits, such as the apple and the pear. Peaches, the vine, and all the semi-tropical fruits do better farther back from the sea. The orange, the lemon, and the lime are found in their greatest perfection in the interior valleys and in the foothills which line the base of the Sierra.

Water for irrigation is obtained from the rivers, from all the small mountain streams, and from artesian wells. Over the lowlands flowing wells are obtained at depths varying from seventy-five to two or three hundred feet. They are bored by machinery and piped with iron, and are quickly and cheaply made. In many of the apparently dry mountain ravines and cañons submerged dams are put in at favorable points, forcing the underground flow of water to the surface. In others, tunnels are run at a slight slope until bed-rock is reached, and the stream tapped and brought to the surface. In other localities

extensive storage reservoirs are constructed. In the open valleys windmills are used by the thousands for pumping water for household and garden use.

This general use of water, besides adding so immensely to the productive capacity, and thus to the wealth of the country, constitutes one of the great charms of life in both city and country. It gives to the farmhouse the piped water and all the conveniences of life which are ordinarily found only in cities, while in city and country alike dooryards and lawns and flower gardens are kept green and fresh through the rainless summer by the liberal use of water. Strangers and newcomers constantly express surprise at the pleasant surroundings of the country houses.

Under this system of cultivation and with the natural fertility of the soil, stimulated to the utmost by the warmth of the long summer, and unchecked by any severe chill to the winter, the productive capacity of the country and its power of supporting a dense population are very great; in fact, the area of land which a laborer can take care of is much smaller than in the less productive East. The tendency is in consequence to a more thorough subdivision of land. Twenty acres are—especially in the fruit districts—a sufficiently large area for the united labors of a large family, and, with ordinary prudence, they will live more comfortably and clear more money than on the large farms of the Mississippi Valley. This great productive capacity explains the apparently high price of land.

The time is not far distant when what is distinctively known as Southern California will support and give wealth to a population of several millions. As yet, the country is hardly touched by agriculture—only a settlement here and there over the broad plains; but the influx is now so rapid and unceasing that all this will soon change. One noteworthy feature of the incoming popu-

lation is that it is made up almost entirely of the well-to-do—those who bring intelligence and money with them, and are prepared to improve their lands at once. Another feature is the colony system. Large tracts of land are purchased and water piped over the whole before they are divided and sold out; schoolhouses and churches are provided for, and all the conveniences and appliances which in other lands are found only in old settlements, and so the discomforts of ordinary frontier life are avoided. No other portion of the Pacific coast is so well opened up and tapped by railroads. The various lines penetrate in every direction, so that the farmer has ready access to market, and every facility for shipping his produce.

Few countries yield as great a variety of products as Southern California. In the list may be enumerated wheat, barley, corn, potatoes—Irish and sweet—and all kinds of vegetables, melons, berries, fruits of every variety found in the temperate and semi-tropical zones, including, in the latter, the orange, lemon, lime, fig, and banana, nuts, the vine, the olive; also honey, wool, meat, fish, petroleum, asphaltum, some coal, and timber. Many others might be mentioned, but the list given will serve to show the wide range.

This wide range of products, together with the regularity of the yearly rainfall and the extensive systems of irrigation, make the country peculiarly exempt from the drawback of dry seasons, such as are found in many sections east of the Rocky Mountains.

A feature to be noted in the agricultural and horticultural products of Southern California is the relatively high valuation to the bulk, and the consequent cheapness of placing them in the markets where consumed. Wheat and barley, which are bulky, take ships in our own harbors for the ports of Europe, having to pay no railway charges over long lines. Corn is turned into lard and bacon at home, and has the whole interior of the mining

Territories for a market. Fresh fruits and vegetables of all kinds go by the train load to Arizona and New Mexico. Dried and canned fruits, which are produced in large quantities, go directly to Europe by sea. The orange, the lemon, and the lime are shipped by the train load all over the Pacific coast, and eastward to the Territories and the Mississippi Valley. Raisins have the whole United States for a market. Wool, in excess of the consumption of the factories here, goes by sea to the East and to Europe. Wines and brandies lade in our own ports for all parts of the world. Petroleum has the whole Pacific coast for a market, as no other point has developed it in paying quantities.

The olive is just beginning to show its possibilities as a wealth-producer. It has been cultivated in the old mission orchards for a century, but now a rapidly increasing acreage is devoted to its culture. So valuable is it deemed in southern Europe, that the kingdom of Italy alone has fifteen hundred square miles of solid olive orchards.

Commercial Development.

In the earlier days of the Pacific coast, when gold was the one great product, and its quest in the mines the one absorbing pursuit of the intruding population, trade lines became fixed in certain channels. Every other industry of the coast was viewed only in its possible relation to the mining interests. San Francisco, as the shipping point of the mining counties, became, by her location and by the rapid accumulation of capital, the commercial metropolis of the whole coast. Between the California of that day and the East lay the little-known heights of the Sierra and the Rocky Mountains and the long reaches of almost trackless desert. Instead of the railroads of to-day, were only the scattered trails of the pioneers. Trans-continental traffic was an impossibility, and the ocean

became the highway of trade. Everything in the shape of imports for California came by sea to San Francisco, and was thence distributed by sea along the coast north and south. Everything to be exported was gathered in to her wharves by vessels plying in a coastwise trade, and thence reshipped for the commerce of the world. The merchants from all over the coast went to San Francisco to buy their stocks of goods. The banks of San Francisco controlled the finance of the coast. Her commission merchants fixed the prices of the products of the coast. When men spoke of the commerce of the Pacific slope, they meant the commerce of San Francisco. No other portion of the United States has ever been so dominated by the preponderating influence of one commercial center. It was an exceptional state of affairs, brought about by an exceptional train of circumstances, and could not, in the nature of things, continue indefinitely.

About the year 1875 a great change set in. Like most far-reaching changes in the lines of trade, men were slow to perceive its drift. The merchants of San Francisco were slow to perceive it. Even now, when the trade of the coast has in a measure slipped from their grasp, under the working of laws which must prevent it from ever returning, they scarcely seem to see what it all means.

The long, undisputed monopoly had the effect which it always has, of narrowing business methods and sapping energy. They became provincial in their ways of business. The trade which had to come to them they ceased to strive for. When it no longer had to come to them, they had lost the art of striving for it, and could not meet the keen, wide-awake competition of business centers which began to reach out from the East.

A representative of one of the leading San Francisco papers said recently to the writer: "There is no hope of a change in the business methods of San Francisco

until the present generation of business men dies out, and new men fill their places."

And the end is not yet. It is only the beginning. The revolution was only hastened by the lack of foresight in San Francisco's business men. Back of it were immutable laws of trade which, had San Francisco possessed every energy and the keenest foresight, would in the end have worked out the same result—only, it might have been somewhat delayed.

What are the facts in the case?

Transcontinental Roads.

Attention has already been called, in that portion of this part which was devoted to the central belt, to certain marked features of the various lines across the continent. It may not be amiss to mention them again.

Both the Sierra and the Rocky Mountain Ranges gradually rise as they go northward, until their highest portions are found between the thirty-fifth and forty-third parallels. This is also the region of the highest mountain passes, of the deepest snows, and of the severest winter storms. It is the line of the greatest reach of desert, and is the line across the broadest portion of the continent.

Under pressure of the war, and, in fact, as a military measure, and with the assistance of large Government subsidies, the Central Pacific Railroad was pushed across by this line to the Pacific coast. It is probable that even then the line would have been run farther south but for the unsettled state of the country through which it would have had to pass, and the possibility of its seizure by the Southern armies.

Years went by, and other transcontinental lines were projected and built, but they did not follow the central route. Trade seeks, as a matter of economy and profit,

the shortest lines between terminal points, the lowest grades, freedom from interruption by storms, and a productive tributary territory through which to pass. It did not find these upon the central route. It found them farther south. It was found cheaper to flank the Rocky Mountains and the Sierra rather than to cross them. And so the newer lines, even when starting from the East, on the central line, were deflected toward the south as they began to make the rise of the continent.

Lines which had crossed the Rocky Mountains found before them the high Sierra, while southward spread the easy slope of the valley of the Colorado, and then the low passes through the Sierra to the sea. Traffic from sea to sea found only thirteen hundred miles from the wharves of Galveston to the wharves of Port Los Angeles, San Diego, or San Pedro, and, instead of the interior desert of the more northern routes, the long, fertile valley of the Gila.

What has been the result? The central line of railroad across the continent has now been finished for twenty years, and in all that time no second line has been built or even proposed over that route. The southern routes, on the contrary, have practically three complete lines: the Southern Pacific, from New Orleans and Galveston, to Los Angeles, Santa Monica, and San Pedro; the Atlantic and Pacific, which taps the Southern Pacific at Mojave; the Atchison and Topeka, which reaches the sea at Santa Monica, San Diego, and at Redondo, one of the ports of Los Angeles; and now the Union Pacific proposes to extend itself by its Southern Utah branch southward along the easy grades of the inner plateau to the sea in Southern California.

One of these roads, the Southern Pacific, after reaching the sea at Port Los Angeles and San Pedro, turns northward again, as a coast road to San Francisco.

By thus turning southward as they make the rise of

the continent, these roads escape the great elevations and the steep grades of both the Rocky Mountains and the Sierra; they escape the deep snows and the severe storms of the winter; they gain, owing to the sharp eastward trend of the Pacific coast in Southern California, shorter lines to the sea.

Another and very important gain is made. Instead of traversing for hundreds of miles the non-producing desert lands of the central route, which can furnish to them little business either in the shape of way-travel or way-freight, they traverse the most fertile portion of the interior of the continent, the high timber and grass lands of New Mexico, and of northern and eastern Arizona, and then the long, fertile valleys of the Gila and the Colorado and their tributaries.

The productive capacity of these valleys has already been described. It is sufficient to add here that, sooner or later, with their almost unlimited area of deep, rich soil, and their practically inexhaustible supplies of water for irrigation, they must contain a dense population numbering into the millions, and with their traffic must furnish a large and profitable way-business to the southern transcontinental lines.

Looking to the future, the richest and the most populous of all the transcontinental routes from sea to sea will be that which takes in Southern California and these great fertile, interior valleys which lie back of it. With these facts from which to reason, it is not difficult to foresee the future drift of trade. The law of grades, the freedom from snow, the shorter lines, the productive way territory, and the greater aggregate of population, will inevitably draw the transcontinental traffic away from the central to the southern route.

Even now it is found cheaper to ship freight intended for San Francisco by the way of Los Angeles than to send it across the northern route by the Central Pacific, and a

large portion of her traffic takes this line. With the development of the southern ports and the establishment of steamer lines, the Asiatic and island trade will land at these points, and so save the five hundred miles of extra railroading, and the heavy grades of the Tehachapi on the line south from San Francisco to Los Angeles.

Harbors.

The Pacific coast south of Puget Sound is, by nature, deficient in harbors. The only two good natural ports within the limits of the United States south of that point are San Francisco and San Diego. Of the harbor of San Francisco it is scarcely necessary to speak; it ranks among the few great seaports of the world. San Diego, less known, is also one of the harbors turned off finished from Nature's hand. A landlocked sheet of water, some twelve miles in length, with a safe, deep entrance, carrying some twenty-three feet at low tide across the bar, it has the capacity to accommodate a large commerce. The California Southern line of the Atchison, Topeka, and Santa Fé road reaches tide water there. It labors under the disadvantage of lying at the southern edge of the great area of agricultural land of Southern California, and opposite a higher portion of the Sierra, which rises again south of the San Geronio Pass.

The greater portion of the shipping of Southern California, from the time of the earliest Spanish settlement, was done through the port of San Pedro, which lies farther north, and opposite the great body of agricultural lands and the center of population, besides being the port nearest to the low passes through the Sierra. This port, which is one of the chief shipping points of Los Angeles, consists of an inner harbor, formerly shut off from the sea by a bar, and an open roadstead, sheltered from westerly winds by Point San Pedro, but exposed toward the

south. For many years the business of the port was managed by a system of lighters, the vessels lying at anchor out in the roadstead. A portion of it is still so carried on. Several years ago the Government, after three careful surveys, entered upon the work of improving the harbor. A breakwater, about a mile and a half in length, was constructed to confine the tide to one channel in its flow across the bar, and the scouring effect of the flow has been assisted by dredging. The channel through the bar, which, when the work was begun, only carried about a foot and a half of water at low tide, has now a depth of some fourteen feet, and eighteen and a half feet at high tide.

The harbor lies twenty miles south of Los Angeles city. It is one of the terminal points of the Southern Pacific system of roads. San Pedro is also the terminal point of the Terminal Railway, a local line.

North of San Pedro, on the other side of the point, is Redondo, a new place, created by the energy of two private citizens, who built a magnificent tourist hotel, a wharf, railroad to Los Angeles, bath house, pavilion, etc. Redondo now does a large shipping business, steamers of the coast line calling regularly, and much lumber being imported by sailing vessels.

Port Los Angeles, sixteen miles from Los Angeles, is another terminal point of the Southern Pacific. Here that railway has a great wharf four fifths of a mile long, which was constructed at a cost of one million dollars, and where a large proportion of the shipping of Southern California is now done.

At other points along the coast are good roadsteads, as at Ventura, and at Santa Barbara, where, through the protection afforded by the channel islands and projecting points of land, vessels lie at open sea wharves most of the year with little difficulty.

The effect of the completion of an Isthmus canal,

either by the Panama or the Nicaragua route, will be to stimulate in a marked degree the growth of these southern ports. The commerce which now strikes far out to sea in its long voyage around the Horn, because of the wind currents, and only approaches the California coast as it nears the harbor of San Francisco, will then become largely a coastwise trade, and will pass more under the control of steam; and as the shorter lines will be those nearest the land, it will naturally be tapped first by the southern ports.

Type of Civic and Country Life.

There are a number of exceptional features in the type of life which is growing up in Southern California. It is a type unlike that found upon any other portion of the coast, and, indeed, with scarcely a parallel within the United States. Most new lands go through the slow processes of a rude pioneer life before the comforts and the conveniences of a matured civilization are a possibility; and the first waves of population, while made up of the more energetic elements from older communities, are yet not marked by any high degree of cultivation or mental refinement. The class of immigration which has come to Southern California is, in many respects, the opposite of this; it has been made up largely of the best and most highly cultivated elements of older communities.

Under the old Spanish *régime*, before the Mexican War, when the Anglo-Teuton was yet almost unknown in the land, the country, as headquarters of the Spanish colonial system for the coast, possessed many of the elements of a kindly and refined civilization. It was isolated, little known, slumbering away the years, like some dreary valley of peace. The years came and went, and the restless currents of the world swept by and left it undisturbed. Yet around the old missions, and upon the broad *ranchos*,

and in the quiet *pueblos*, was a kindly, courteous, old-time life, which had in it none of the roughness of the frontier. The writer, coming to Los Angeles twenty years ago, while this old ranch life was not yet in its decay, wishes here to pay at least a slight tribute to the kindly spirit of that type of civilization which is now rapidly passing away. It had in it nothing of the rush and the drive, of the restless energy which have come with the type which has supplanted it; it possibly had fulfilled its mission, and the times were ripe for something else. Yet it came of a blood as truly and intensely American as that which dates from Jamestown or Plymouth Rock. It is even an older American blood, for it dates from the *conquistadors* and the shores of the Gulf, while yet the Anglo-Teuton had only coasted along the west shores of the Atlantic.

These two bloods share the Western Continent between them. As race types they have absorbed all others. With a common mission and a common future, they should be friends. They met here, and were friends. The old Campo Santo and the Anglo-Teuton graveyard hold in their restful sleep hearts that beat as kindly for each other as though no bar of blood or religion ever stood between. The writer has known no warmer friends—none for whom a more tender feeling of kindly regret lingers through the years—than some whose greetings were worded in the courteous speech of Castile.

One face especially comes up from the past with the softened memories of years of personal friendship, and of many a pleasant day spent together in the old ranch house—the face of Don Manuel Dominguez. It is a face wrinkled with the touch of nearly eighty years, eyes dimmed by age, yet having in them the light of a simple-hearted, honest life.

“Your ancestors,” he would often exclaim, when we were speaking of the future of the country, “crossed the

continent by one road, mine by another. For nearly three centuries we have between us possessed the land. We are not *estrangeros*; we are Americans!"

As the old man lay dying, he said, gently, in Spanish, thinking, evidently, as his mind wandered, that he was bargaining for some purchase: "I will pay so much; I will pay no more; *I will pay no less*, for that amount is just."

I thought, as I heard him talking, that the remark was typical of the man, and was also typical of that older Spanish life of which he was a lingering representative.

It is to this older, simple-hearted type of Spanish civilization that a wave of Anglo-Teuton blood has come, unlike that which generally first reaches the frontier.

Before the days of transcontinental roads, the distance and the expense of removal were so great that only the more energetic and prosperous portion of the American emigrating element found its way to this far-off region. After the building of the roads, and when the cost of travel was no longer a bar, the fact that there was practically no Government land in the country kept away that element which drifted to the frontier to take up land, and then, after a few years, sell out and move on. Then, the methods of cultivation and the class of products involved time and outlay of capital before much return could be expected, and a higher average of intelligence in the cultivator. Orchards and vineyards and tropical fruits involved a style of cultivation and of management very different from the simple farming of wheat and barley and corn. The climate, too, as it became more widely known, began to attract the wealthy and cultivated element from all the East.

And so it has been that the emigration to Southern California has been culled out from the choicest of the population of the East. The intelligence, the culture, the refinement, the energy, the wealth of all the East, have

contributed to make up the current which, with each year, is swelling, and will not cease until the land is filled.

The result is already showing in a population which, in all that goes to make up the highest and best type of civilization, can probably not be paralleled elsewhere in America.

If there is any truth in the law of the improvement of race by selection and elimination, and in that other law of the power of climatic surroundings to influence race development, history shows what the fruitage must be. It was in the analogue of this climate, as found about the east shores of the Mediterranean, that, two thousand years ago, grew up the Græco-Latin civilization which for centuries swayed the destinies of the world, and to-day, after all the ages, still stamps itself upon the mental life of the races. The working of these laws was traced by the writer in an address upon *The Climatic Belts of Civilization*.

Education.

The colony system of settlement, which has been so common in Southern California, has borne good fruit in educational work. Wherever one goes, over the country or in villages or towns, the public-school buildings attract the eye at once by their neatness and the creditable style of architecture. The school and the church have gone hand in hand in the work of building up a new civilization.

Good primary and grammar schools are found in the country districts, and high schools in all the smaller towns and the cities. In efficiency the schools of no State rank higher. A State Normal School, with an attendance of several hundreds, exists in the city of Los Angeles. A large number of seminaries and colleges, under control of various churches, supplements this educational

work. Most of these cluster in and about the city of Los Angeles, as the center of population. More detailed reference to the educational institutions of Los Angeles is made later on in this work.

The educational work of Southern California has been planned upon a broad and liberal basis, as it is felt that this is to become one of some half-dozen great educational centers for the United States.

The cool, healthful climate of Southern California and its social advantages will draw to its schools students from the interior Territories and from Mexico, while its advantages as a health resort are already bringing many students from the Atlantic and Mississippi States.

Diseases.

Under this heading may be given the diseases which are peculiar to or endemic in the country, and also those which may hope for benefit by removal to it. Southern California is practically free from any diseases which belong especially to it, or have their habitat, as the naturalists say of a plant, in it. Malaria is but little known. Here and there a spot may be found in mountain cañons, or in river bottoms not reached by the ocean wind, where malarial diseases exist during a portion of the year, but for practical purposes the country may be said to be exempt from them.

It is the benefit which comes of the free sweep of the ocean wind to the whole of the land. The breaking down of the Coast Range of mountains, and the consequent openness of the entire system of interior valleys and plains to the sea, have thus had an important bearing upon the healthfulness of the whole of Southern California. Yellow fever is unknown. Typhoid, which has its habitat wherever men congregate in cities, is found to a limited extent; but the purity of the air and the abund-

ance and excellent quality of the water make it a disease not common, nor ordinarily of a violent type. The cool sea breeze, which gives exemption from fevers, brings with it, however, a certain amount of neuralgias and sub-acute rheumatisms. Persons with a tendency to these troubles escape by living farther back from the sea. Acute inflammatory rheumatism is seldom seen.

The contagious epidemics of children are found here as elsewhere in the world, but with this difference: that the possibility of more thorough ventilation and of a constant supply of pure, mild air in the sick-room renders them much less violent than in the colder climates and the close houses of the East. The proportion of deaths to the number of cases is much less. Pneumonia and bronchitis are occasionally but rarely found.

Plithisis, the scourge of civilization, will require more time for a complete answer. Yet this much seems to be already clear: that it does not often originate here among families free from a strong inherited taint, while the tendency of physical growth among the young, born and reared in this climate, is to an increased lung capacity in proportion to height and weight, as contrasted with the children of the East; and the clear, ruddy complexion and marked vigor of body point to an increased vitality.

Catarrhal troubles are not common. Apart from the ordinary average of cases induced by excesses, diseases of the liver and kidneys are comparatively rare.

The cases which may hope for benefit by coming to Southern California are, first and foremost, the feeble and invalid from whatever cause; those who find the drain upon vitality in a harsh climate too great for them; who have need to spend a considerable portion of each day in the open air, yet who in their own climate are prevented from so doing by the inclemency of the weather; those who need clear skies and sunshine; to whom the refreshing sleep of a cool, bracing night is a necessity after the

warmth of the summer day; those to whose enfeebled digestion or to whose capricious appetites a market stocked with fresh vegetables, fruits, and berries, every month of the year, is of importance. For such, and for all who are suffering from the nervous prostration of overwork, there is probably no better climate to be found. It is a climate in which the drain upon vitality is, with any proper manner of living, less than the gain.

A mistake is sometimes made in the selection of a climate for cases of nervous exhaustion, by sending them to the stimulation of a dry, elevated, interior region. To such cases the first effect of such a climate is like that of a dose of alcohol, the temporary exhilaration of the stimulant, but with the inevitable reaction. For such cases the best climate is one of less elevation and more atmospheric humidity, the climate of a mild seacoast region. It is not the spurring up of stimulation which they need, but the recuperation which comes of restful climatic surroundings.

While the immediate coast line with its fogs develops a certain amount of subacute rheumatism and neuralgia, yet such cases coming from the East often improve in a marked degree with the improvement which comes in the general health; and if they avoid the seacoast, and live back in the interior valleys, they generally escape such troubles entirely.

Persons suffering from malarial poisoning and its various sequels find in the seaside life, and the surf-bathing, an almost certain relief. The number of such persons coming from the valley of the Mississippi and its tributaries is increasing rapidly with each year.

The free action of the skin, which comes of the milder climate, makes Southern California the most favorable portion of the Pacific coast for kidney troubles. With such cases in any chronic form the question is rather one of prolonging life, and of living in comparative comfort,

than of cure. To this end a fair but not excessive action of the skin, freedom from sudden changes of weather and the risk of chill, and the choice of a wide range of diet, are necessary.

In consumption a great mistake is often made. Cases by the hundreds arrive in Southern California which would be much better off at home. No climate can claim to be a cure-all. It should be considered, before starting an invalid upon so long a trip, whether there is strength to endure the fatigue of the journey. Many, too, come without friends or acquaintances, and literally die of homesickness. Many also come who, through lack of means, or through a mistaken economy, rent cold, shady rooms, and live at restaurants, and so, missing the comforts of their home life, are worse off than if they had never started. There is also a great difference in localities and local climates, and invalids differ in constitution, and many, instead of at once seeking the advice of some competent physician as to the point to be selected for residence, drift around thinking that the country is all alike, and one spot as favorable as another, until much valuable time has been lost and possibly irreparable harm done.

To the consumptive coming before the disease is far advanced, having the means to secure reasonable comforts, taking steps to select from the first the locality best suited to the peculiarities of his especial case, and then avoiding the common mistake of trying to make a sight-seeing tour of what should be a quiet rest, the climate of Southern California in some one of its varied phases offers a fair hope of check and amelioration to the disease, and of possibly years of comfortable life, and to some even more—an apparent or possibly real recovery. But this will not be by a winter's trip, or spending a few months here, and then returning again to the climate in which the disease originated. It will be by coming and making a new home. It must not be a trip, but a migration.

The best of all prospects is for the person or the family inheriting the tendency, but in whom it is yet dormant. To them there is a well-founded hope that the disease may remain dormant, and to their children, born and reared in the new home, a prospect of its entire eradication from the blood.

Sufferers from that erratic and torturing disease, asthma, generally secure in some one of the various shades of climate, or in the different elevations which are to be found within a limited area, immunity from the attacks of their remorseless foe.

It is impossible in so limited space to go over the whole list of diseases, but the climatic laws and facts given in this part will enable a competent physician to form an opinion for any especial case.

A pleasant feature of life in Southern California, and one which has much to do with the development of vigorous health, is the custom, which yearly grows in favor, of summering by the seaside and on Catalina Island. The long ocean face of the country is each year, for several months, dotted with canvas villages, where thousands of people live over again for a season the old tent life of the race, and, while enjoying the surf-bathing, drink in with every breath of the salt air the ruddy and rugged health which is born of the sea. Besides these tent villages there are numerous well-built towns with all the comforts and conveniences of settled society, and with numerous and costly hotels. The railroads from the interior reach the coast at many points to accommodate this summer exodus to the seaside.

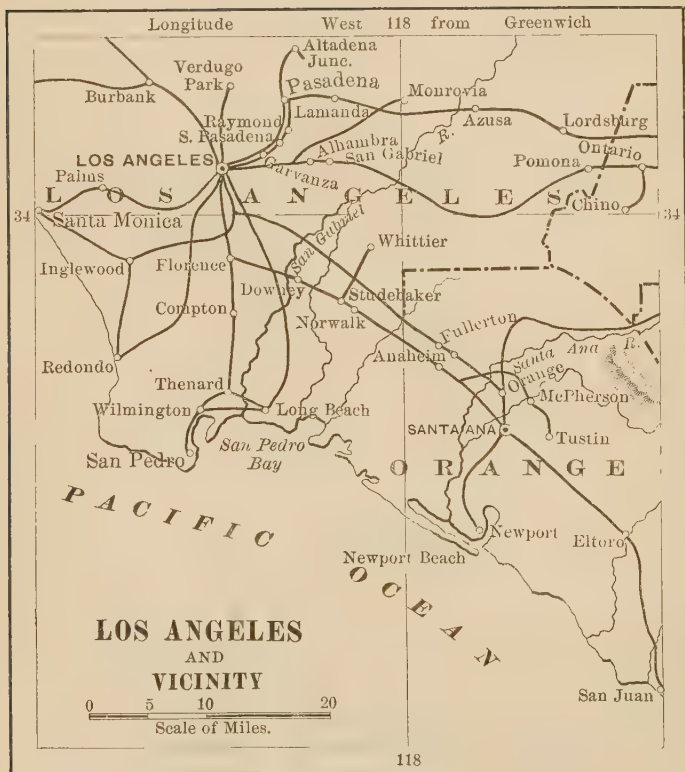
In concluding this part upon the climatology, and some of the allied features of the Pacific coast, the writer would say that the task has been to him a labor of love.

It is a slight tribute which he pays back for the health and the sunshine which, during all these years, it has thrown into his life.

Coming to the coast in boyhood, he has lived its varied life—in the mountains—on its broad plains—by the sea—and upon the deserts of the great inland plateau—until they have interwoven themselves into the very fiber of his being. Why should he not love his land? It has been to him in all these years a thing of infinite worth. He can well understand the love of the old Greek for his seagirt home.

And he has faith in its future. For over thirty years he has taken active part in its growth; has seen it broaden and strengthen, and has seen behind the feverish quest for gold a higher, nobler life growing up—a life that no longer has eyes bent downward to the yellow-speckled slime of the river, but has lifted them up to the eternal mountains, and the deep skies that lie beyond; a life which no longer hears only the jingle of the nugget upon the gaming table, but has ears growing attuned to the voice of the wind in the upland pines; a life which is learning that there are other and better questions to man's existence than what he shall eat, and what he shall drink, and wherewithal he shall be clothed.

And in this newer and nobler life which is growing up here upon the shores of the Pacific, and upon the highlands of that great inner plateau which reaches on southward to the city of Mexico, it seems to him he can discern the fair promise of a civilization which had its only analogue in that Græco-Latin race-flourishing which came to the eastern shores of the Mediterranean centuries ago.



PART II.

LOS ANGELES, ORANGE, SAN DIEGO, SAN BERNARDINO, VENTURA, SANTA BARBARA, AND RIVERSIDE COUNTIES.

BY WALTER LINDLEY, M. D.

The Overland Trip—How to enjoy it.

The health-seeker who, after years of suffering in both mind and body, after vainly trying the cold climate of Minnesota and the warm climate of Florida, after visiting Mentone, Cannes, and Nice, after traveling to Cuba and to Algiers, and noticing that he is losing ounce upon ounce of flesh, that his cheeks grow more sunken, his appetite more capricious, his breath more hurried, that his temperature is no longer normal, his pulse beats 100 instead of 72, and that his finger nails curve ominously, turns with a new gleam of hope toward the Occident.

Another health-seeker who, after years of exciting, exacting work, is unable to concentrate his mind, worn out by sleepless nights, weak from loss of appetite, and distracted by melancholy, also looks toward the equable climate and mild breezes of the Pacific slope for the sedative and restorative effects that medicine fails to supply.

Still another health-seeker, whose joints no longer respond to the mandates of the will, who is harassed and

tortured with pains at every change in the weather, looks to the genial climate and the healing waters of the springs of Southern California for relief.

Still, again, we have the wretched sufferer, whose sleepless nights are one long struggle for breath because of an inherited or an acquired asthma, and who also hopes in the varied climates of Southern California to find one that will dethrone the demon which clouds his life.

The questions naturally arise: Where shall I go? What route shall I take? How long shall I be on the way? What will be the expense? What are the accommodations after reaching there? What is best to carry with me on such a journey? What clothing shall I need? Shall I take my family? Are there good schools for my children? What are the means of whiling away the time?

The man with sporting proclivities wants to know of trout-fishing, of the facilities for boating, and of the various kinds of game. The artistically inclined wishes to know of the scenery; the student of Nature is interested in the mosses, flowers, and ferns; the horticulturist desires knowledge of the fruit; the farmer of grain; the dairyman of the creameries and cheese factories; the physician of the prevalent diseases, the wind, altitude, temperature, rainfall, and humidity. It is to answer these questions that this book is written.

There are excellent eating stations along all the various routes, but trains are apt to be behind time, and frequently the traveler who has not provided for himself must wait until eleven or twelve o'clock for breakfast or till midnight for his dinner. The suggestion of Rev. E. P. Roe,* author of *Barriers Burned Away*, that the overland roads furnish tea, coffee, and sandwiches when trains are delayed is a good one, and has been complied with, but nevertheless a well-filled lunch-basket is a great desideratum.

* Letter from Los Angeles to Chicago Inter-Ocean.

It is, on the whole, much better for health and comfort to eat at the stations and get freshly cooked food whenever the railway eating stations are reached at reasonable hours.

The traveler should always carry something with him to guard against constipation. A sedlitz powder, a teaspoonful of Rochelle salt, or a tablespoonful of Hunyadi Janos taken before breakfast, is a simple and efficient preventive. A bottle of paregoric, a bottle of aromatic spirits of ammonia, and a flask of good whisky, are all excellent things to carry in the satchel. If you do not need them, some fellow-traveler will. The sensible transcontinental traveler throws aside unnecessary conventionalities, and in twenty-four hours becomes well acquainted with every occupant of his Pullman. Elderly ladies and children generally are the earliest passengers to start the social ball rolling.

On one transcontinental trip, in the writer's experience, all were having a jolly good time except one man, whom the others called the mute; but on the third day a cup of good tea from a good-hearted old lady caused his stolidity to vanish like a heavy mist before the noonday sun, and he then became one of the family.

In another car there was a solemn-looking man from San Francisco and a mischievous little three-year-old girl from Los Angeles. This little girl's mamma was in a constant tremor, thinking of the terrible consequences should her little girl annoy the sedate gentleman. One day she relaxed her vigilance, and, on looking up, was terror-stricken to see her child standing on a seat back of this man and with a string around his neck was crying in childish glee, "Get up, horsey!" The mother ran to the man with apologies; but he soon quieted her fears by telling her that the man who didn't like children ought to be shot, and from that time on he joined in the social diversions of the trip.

Several years ago on the same train were the Rev. Samuel Scoville, son-in-law of Henry Ward Beecher, and Rev. Charles B. Sumner, also a New England clergyman, and these preachers and their families entered heartily into the pleasures of the trip. When Sunday came, the train was passing through the grand pine forests of Arizona, and there in one of the Pullman's, passing under the branches of "God's first temples," services were held. The clergymen conducted the exercises. Familiar hymns were sung, and brief remarks were made by several. Among others a spiritualist spoke, and said that he had abused the Church frequently in the past, but, after listening to these services, he felt like taking it all back. Thus, incongruous people become pleasant and mollified.

During such a trip cards, books, newspapers, and illustrated papers are always in demand. A young man with a violin, or a young lady with a guitar and a sweet voice, is a great acquisition to any party.

The four days' ride from Kansas City, New Orleans, or Omaha is either dull, monotonous, and desolate, or cheerful, exciting, and instructive, just as each passenger elects.

The wide-awake traveler will gain much knowledge of the country he will traverse by conversing with his fellow-passengers.

The Arrival in Southern California.

But we will now suppose the journey across the great republic is completed, and the traveler is in Los Angeles, the central city of Southern California.

Should you be fortunate enough to have friends whom you expect to visit, be sure and telegraph them the time of your arrival and what route you will travel. Inform your friends that, if the train arrives at night, you will remain in the car until morning. The most dismal courte-

sy imaginable is to wait around a cheerless depot from hour to hour through a chilly night in an "abnormal state of uncertainty," expecting friends on a delayed train.

If you have no hospitable friends in Los Angeles, decide what hotel you are going to before you arrive; and, in fact, it may save you trouble and annoyance to have written and secured accommodations before you left home.

By having these questions settled, you can have your baggage checked to your hotel or boarding house before you arrive in Los Angeles, and thus avoid the risk of delivering it to irresponsible carriers. The cars of several street railway lines pass the depots and hotels at intervals of five minutes. Fare, five cents on all lines.

Prices in hotels and boarding houses range from one to four dollars per day. Day board at restaurants averages five dollars per week. A wholesome and well-served meal, including meat, coffee or wine, and desert, may be ordered at a restaurant for twenty-five cents.

A Century in Los Angeles.

Los Angeles is not a new town like Kansas City, Omaha, or Minneapolis. It was a thriving *pueblo* when the Franciscan Fathers established a mission here in 1781. On account of its beautiful location midway between the mountains and the sea, its delightful climate, and the fertility of its soil, it was named *Pueblo de la Reina de los Angeles* ("Town of the Queen of the Angels").

Forty-one years later the first American, a man named Chapman, was brought to Los Angeles. He came as a prisoner of the Mexicans, but soon fraternized with them, and afterward married into a Spanish family. Many similar marriages—i. e., American men to women of Spanish descent—have taken place in Southern California, and, as a rule, they have proved very happy. There are in Los

Angeles to-day numerous young men of prominence and promise who have Castilian mothers and American fathers.*

In each of these marriages there was the stipulation that the woman should control the religious training of the children; and, even from a Protestant standpoint, a fortunate proviso this was, because up to 1854 the only organization in Los Angeles upholding any standard of morality whatever was the Roman Catholic Church. It erected houses of worship, hospitals, and schools; it was the pioneer in all good works.

In 1824 a Scotchman came to Los Angeles and opened the first general store on the American plan. In 1831 the opening of the Santa Fé trail created a new outlet to the East, and was the means of developing an extensive trade.

In 1835 Los Angeles became the capital of California. Hostilities between the United States and Mexico having been precipitated, and the Mexican War inaugurated, Commodore Robert Field Stockton † and Major John C. Fremont, on August 13, 1846, marched into Los Angeles and raised the Stars and Stripes.

Don Pio Pico, who was then Governor of California under appointment from the Mexican Government, had left the night before on a tour through what is now the southern part of Los Angeles County. Governor Pico was until last year, when he died, a resident of Los Angeles, and could be seen on the street any day, a hearty and active man over ninety years of age.

Fremont and Stockton went north, leaving Lieutenant

* The writer has never known, although there are probably exceptional cases, of a Spaniard or Mexican of this section marrying an American wife. Instances are not rare where Americans have married Indian wives, and these unions have also proved surprisingly happy.

† Afterward United States Senator from New Jersey.

Gillespie in charge with but seventeen men. There was soon a general revolt under Captain José Maria Flores, and, in the latter part of September, Lieutenant Gillespie, after being in a state of siege for several days on Fort Hill,* surrendered Los Angeles to the Mexicans on condition that he and his men be permitted to march unmoles- ted to San Pedro. The handful of men was taken on board the merchant-ship *Vandalia*. On January 10, 1847, Commodore Stockton and General Stephen W. Kearny recaptured the town, and on the 14th Fremont joined them with his forces after effecting a treaty with the Mexicans under General Andres Pico at the Cahuenga, a beautiful mountain pass eight miles from the city.

On January 16, 1847, Fremont became Governor of California, establishing his headquarters in the two-story adobe building yet standing at the corner of Aliso and Los Angeles Streets. This building was at the time the best in town, for, as one old settler said, "Fremont always would have the best of everything." Fremont remained in Los Angeles until March 22d, when he took the famous mustang ride with Jesus Pico and Jacob Dodson to Monterey, five hundred miles away. During this trip the dashing young officer averaged nearly one hundred and twenty-five miles a day, for the round trip of a thousand miles, being absent from Los Angeles just eight and one half days.

About this time the seat of government was removed to Monterey, and Kearny, in accordance with instructions from Washington, became Governor. On April 7th Colonel Mason superseded Fremont as commander in Los Angeles, and May 9, 1847, General Kearny arrived and took command, and three days later Fremont left for the North.

Hon. S. C. Foster, one of the early mayors of Los An-

* Fort Hill is a point in Los Angeles well worth visiting.

geles, a resident of this city since 1847, gives many interesting reminiscences of Fremont's residence in Los Angeles. Mr. Foster was a member of the California State Senate when Fremont was a candidate before that body for re-election to the United States Senate. He says that he voted for Fremont one hundred and thirty-five times, and that finally the Legislature adjourned without an election. Mr. Foster states that he was not voting so much for Fremont as he was for Senator Thomas H. Benton, Fremont's father-in-law, as he thought it would be the same as giving Benton two votes!

The first Protestant preacher in Los Angeles was Rev. J. W. Brier, of the Methodist Episcopal Church, who arrived here in 1850, his entire earthly possessions being contained in the ox team which he drove. He held the first service in the adobe residence of Colonel J. G. Nichols, where the courthouse now stands. Little did he reckon that in 1895 his denomination would have fifteen churches and a collection of massive university buildings in this city. The first mayor of Los Angeles was elected in 1850. The first brick house was erected, at the corner of Third and Main Streets, in 1852. This building was one story high, and, in 1859-'60, was occupied by Captain Winfield S. Hancock. This young military officer was very popular in Los Angeles, and when he became a candidate for President, many Republicans of this vicinity found the ties of friendship stronger than party ties and openly supported their hero. A few years before his death General Hancock visited Los Angeles and received a great ovation. The first English-speaking school was taught by Rev. Dr. Wicks in 1850. The first American child born in Los Angeles was Gregg Nichols, who saw the light of day April 15, 1851. The first newspaper was born May 17, 1851, and was christened *The Los Angeles Star*.

In 1853 there were three dry-goods stores. In 1854

the population of Los Angeles was four thousand, of whom but five hundred were Americans.

In 1854 the first Masonic Lodge received its charter. The same year, in September, the first hive of bees was brought to Los Angeles. It had been purchased in San Francisco for the sum of one hundred and fifty dollars. The same year a tannery was established. In 1855 bull-fighting on Sunday was stopped. During the same year the first Odd Fellows' Lodge was organized.

Although Judge Lynch had indulged in a few executions, the first legal hanging occurred in Los Angeles May 30, 1856. A few years later an atrocious murder was committed, and the murderer lodged in the Los Angeles Jail. A mob, thirsting for his blood, gathered around the jail, when Colonel John F. Godfrey, an able and popular lawyer, mounted the steps in front of the jail and readily gained the respectful attention of the would-be rioters. "Gentlemen," he said, "the widow of the murdered man is left in poverty and with a large family of children. I know you all sympathize with her deeply." (Approving responses.) "Then I will appoint four men to go through this audience and take up a collection." The shrewd colonel then appointed several of the ringleaders to take up a collection, and the result was that the sight of the contribution box dispersed that mob quicker than it could have been done by a battalion of soldiers.

In the fall of 1857 the citizens of Los Angeles sent the Hon. H. D. Barrows to Washington with a barrel of old port wine, two cases of white and red wines, some choice varieties of brandies and angelica wines, and a great variety of oranges, lemons, almonds, citrons, English walnuts, and grapes, as a present for President Buchanan. United States Senator Gwin was a passenger by the same steamer, and voluntarily proffered to present Mr. Barrows to the President.

Mr. Barrows, in conversation recently, said he found

the President a very courtly elderly gentleman. He received them with quiet cordiality and made many inquiries about California and especially about Los Angeles, which at that time was almost a *terra incognita* to the people of the Atlantic States. President Buchanan thanked Mr. Barrows particularly for the wines, and said, with a twinkle in his eye, that he "claimed to be a good judge of wine." Senator Gwin, on the same occasion, gave the President a bottle of very old California grape brandy.

In 1858 Lieutenant Beale (later General Beale, of Washington) brought a number of Arabian camels to Los Angeles, believing they would prove profitable as beasts of burden. The experiment proved a failure, and the animals were finally sold to a circus company.

In 1860 the population of Los Angeles was four thousand five hundred, and the first telegraph line was constructed. In 1867 a castor-oil mill and gas works were established. In 1868 the Los Angeles City Water Company obtained a franchise, and the first railroad was built. The road was twenty-three miles long, and united this city with the harbor at San Pedro.

In 1871 there occurred a disgraceful riot, in which eighteen Chinese were killed. The same year the first fire company was organized and at once entered upon the arduous duties of controlling the city's politics.

The first woolen mill was established in 1872, and the Public Library was founded in 1873. In 1874 the first fruit-drying establishment was inaugurated, on an extensive scale. The year following a broom factory and artificial-stone works began operations.

In 1876 Los Angeles had a bank failure, a drought, and the smallpox. The only silver lining to this cloud was the completion of the Southern Pacific Railway from San Francisco, thus giving Los Angeles for the first time railway communication with other cities. Railways were

soon built to the seashore at Santa Monica, sixteen miles away; to Santa Ana, in the rich Santa Ana Valley, thirty miles away; and ere long the Southern Pacific Railway was extended directly east through Arizona, New Mexico, and Texas, to New Orleans.

On October 6, 1880, the College of Letters of the University of Southern California was formally opened, with a large attendance.

September 5, 1881, Los Angeles celebrated her centennial anniversary with great enthusiasm. Several thousand people were in procession. The Mexican population took an important part in these ceremonies. Thousands of them were in line, on spirited horses. There was a Mexican primitive two-wheeled cart, with solid, hewed wheels, drawn by two oxen, a carriage containing two Mexican women, aged respectively one hundred and three and one hundred and seventeen years, and many other features peculiarly Mexican.

During this same year the first four-story block was erected, the owner being Remi Nadeau, who made his advent in Los Angeles in early days as the driver of an ox team. In 1882 the State normal-school building was erected, and during the same year the United States Magnetic Observatory—the only one in the country—was removed from Madison, Wisconsin, and established in this city. A still more important enterprise was the inauguration of an elaborate system of electric lights. The city is now lighted by about one hundred and fifty three-thousand-candle-power arc-lights. No other city in the world surpasses Los Angeles in the matter of street illumination.

In 1884 Mademoiselle Rhea appeared in *The School for Scandal*, in the dedication of the Grand Opera House. The first cable of several street railways was also built during this year. But we will cease the enumeration of the many important events which have taken place in Los

Angeles during these last few years, as we have already in this brief historical outline recounted enough data; so that the reader may understand that, while Los Angeles is over a century old, yet it is, at the same time, a comparatively new town. It is old as a picturesque, sleepy, free-and-easy, Spanish *pueblo*, but new, as a thriving, progressive American city; old, as a center for an extensive grazing country—new, as a distributing commercial mart; old, as a station where the solitary horseman stopped for rest and refreshment—new, as a railroad center, where nearly a hundred loaded trains daily discharge their passengers and merchandise; old, as a Catholic mission, where the noble-hearted, self-sacrificing priests, under the beneficent guidance of Padre Junipero, held sway—new, as a cosmopolitan city, where a hundred Protestant churches vie with the cathedral chimes in directing the thoughts of man.

But the old has not entirely passed away. Many of the one-story adobe buildings still remain. Especially in that portion of the city known as Sonora-town several thousand descendants of the old Spanish families, who in their wisdom founded Los Angeles, are yet among us to claim the credit due their race.

The distinguishing virtues of the Spanish-American population are charity and fidelity. Go to our county hospitals and almshouses, and you will look in vain for the Mexican or Spaniard.

The German and the Irishman are there; the Englishman and the Frenchman are the county's wards; the African from Mississippi and the American from Virginia sit side by side at the pauper's table; but the Mexican and Spaniard will share his last crust with a distressed countryman. The ties of kinship are not necessary to call forth from a Mexican the last dollar for a common fund. He who would criticise these descendants of early settlers for their lack of thrift, their impulsive tempers,

and their ways of idleness, could, by looking a little closer, learn of virtues that would make the average American blush for his own race.

But this Spanish population is rapidly disappearing. Death and emigration are removing them from the land. During the first half of this century they were noted for health and longevity. They spent their days in the saddle and their nights in sound sleep in well-ventilated houses, or wrapped in a *serape*, with the faithful stars watching over them. Their diet was fresh meat or game; their drink, water, milk, and claret. These healthful habits have all changed. They no longer have unnumbered horses to ride and vast herds of sheep, from which one for a meal would never be missed. Their broad acres now, with few exceptions, belong to the more acquisitive American or Hebrew. Grinding poverty has bred recklessness and moroseness. Simple healthful amusements have in many instances given way to midnight carousals, and long-continued dissipation and want are huddling them together in the most unwholesome localities in the city.

But upon this dark picture the morning light is breaking. Here and there the scion of some old Spanish family is distinguishing himself as a statesman, an attorney, or a business man. The reader has doubtless seen a merchant who had been regarded as a financial leader suddenly succumb to some irresistible disaster; for years after he would appear to be irretrievably crushed, and then gradually he would recover his former ability. The keen light of intelligent activity would again shine forth through the lusterless eyeballs, and ere long this disheartened man would mount up to achievements he had never before dreamed of. So to-day we see, springing from the loins of these Spanish families, who have been so ruthlessly crushed to the earth, ambitious, industrious, brilliant young men, some one of whom may prove to be the guid-



A Veranda in Los Angeles.

ing star that will yet lead his fellow-countrymen to a position which this race has not known for decades.

The Los Angeles of To-day.

There is probably no city of equal size in the United States which is so well known throughout the country as Los Angeles, the beautiful county seat of this county, which has made such marvelous growth during the past ten years. It is charmingly located at the base of the Sierra Madre foothills, fifteen miles from the coast and about three hundred feet above the sea level. The city limits cover thirty-six square miles of hill, valley, and plain, affording a succession of varied and picturesque residence sites.

In 1880 Los Angeles was a quiet semi-Mexican *pueblo* of eleven thousand people. Its houses were mostly of adobe, or sun-dried brick; its streets were unpaved, and few even graded; its chief commerce was confined to wool and hides. Even in 1885 there had been little improvement. The changes that have taken place during the past ten years are truly wonderful.

The population of Los Angeles by the census of 1890 was over fifty thousand, and is at present not less than seventy-five thousand. There are in the city one hundred and twenty miles of graded and graveled streets, twelve miles of paved streets, and over one hundred miles of cement sidewalks. Most of the street paving is of asphaltum. An internal sewer system, costing \$374,000, has been completed, also an outfall sewer to the ocean which has cost \$400,000. There are several systems of water supply. For over twelve years the city has been lighted entirely by electricity.

The value of buildings erected within the past ten years—and mainly within the past seven—is not less than \$30,000,000, including a \$500,000 courthouse, a \$200,-

ooo city hall, and a number of handsome four-, five-, and six-story blocks, costing from \$100,000 to \$300,000 each.

Three handsome theaters seat 1,400, 1,000, and 1,100 respectively. They present most of the leading attractions from the East and Europe. There is also a large pavilion, seating 4,000, where fairs, fruit shows, and occasional theatrical performances and concerts are given.

The street railroad system is probably superior to that of any city of equal population in the United States. There are over one hundred miles of street railroad track, mostly cable and electric.

Los Angeles is favorably situated for commerce, as well as for pleasant residence. There is no city in the West where business is better than in Los Angeles at present. The wonderful natural resources of the surrounding country are shown by the manner in which Los Angeles survived the effect of the wild speculative real-estate boom of 1886-'87. There were no failures, and while many, of course, bought more land than they needed, and suffered individual discomfort, the affairs of that period have been gradually adjusted, prices of real estate have come down to a reasonable basis, and city property is again attracting the attention of the conservative Eastern capitalists, who see in it a good investment. Several Eastern men of wealth have invested millions in Los Angeles property during the past year, and are building large business blocks. A big revival is noticeable all along the line. Substantial buildings are going up in every direction and improvements of an enduring character are being made. With the increase in population, manufacturing is also making a forward stride.

The Los Angeles Chamber of Commerce has done much to advance the interests of the city and county.

Socially, Los Angeles is a most attractive city, the inhabitants being cosmopolitan, hospitable, and refined. The schools are second to none in the United States.

There are also a number of colleges. The public library contains over forty thousand selected volumes. Lectures, concerts, and other entertainments are of almost daily occurrence. The ocean and mountains are both within three quarters of an hour's ride by rail.

The homes of Los Angeles charm the visitor, most of them standing in spacious lots, beautified with semi-tropical trees and shrubs. Hotels and boarding houses are plentiful and rates reasonable.

What to see in Los Angeles.

The tourist who has leisure will be well repaid by visiting one of the open *zanjas* in the suburbs, where the Mexican population is numerous, and watch the señoras doing their weekly washing. The *tomale* man is another Mexican feature, who is very similar to the hot-corn hawker of Eastern cities. The *tomale* consists of green corn mashed and mixed with chicken, olives, *chile* (red pepper), and numerous other ingredients, all wrapped in a corn-husk, tied at the end, and furnished hot. It is really a delicious morsel.

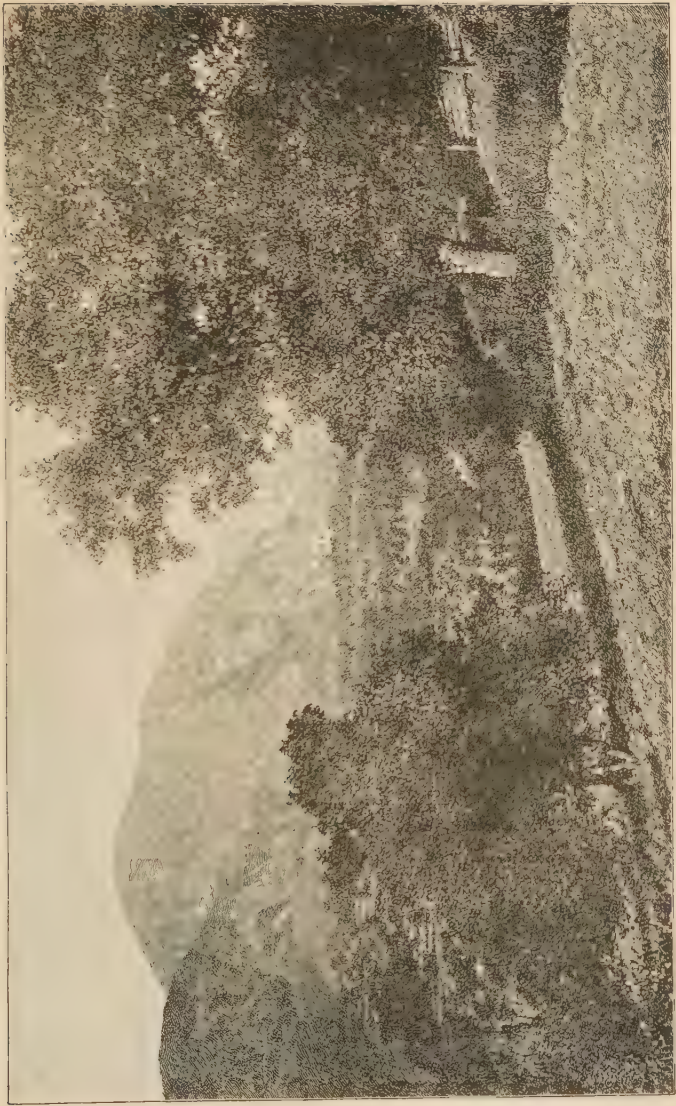
If the tourist desires a genuine Mexican meal, he should go to Illich's—an old-time Los Angeles restaurant—and order a regular "Spanish breakfast."

Los Angeles is midway between mountain and sea, being fourteen miles from each. It is also midway between Santa Barbara and San Diego—the former being one hundred miles northwest, the latter one hundred miles southeast. The altitude of the city varies from three hundred and fifty to five hundred feet. Much of the residential portion is built on hills that are traversed by cable street-railways, by which it can be easily reached on payment of a five-cent fare. No visitor should miss the ride over these hills, and the bird's-eye view of the city and valley.

In architecture, Los Angeles presents every variety, from the quaint adobe of the Spaniard to the four-, five-, and six-story brick or stone building of a modern type. On Spring Street and Broadway there are half a dozen business blocks which would be a credit to any city of three times the size. For homes, the popular building is the rose-embowered cottage. These beautiful cottages, surrounded by well-kept lawns, with hammocks swinging on verandas or under pepper trees, and with fuchsias, heliotropes, and roses clambering to the roofs, are the choice of many wealthy people. Mechanics and even day laborers here easily have homes that delight the artist's eye.

Would you obtain a comprehensive impression of Los Angeles as it is to-day within a short space of time? You can do this in a day and a half if you are a good walker and will start out before the sun is very high, or you can drive to all the points mentioned in a buggy. In making the trip you will get a better general idea of Los Angeles and see more of it in a day than many old residents have seen in ten years, for Los Angeles is an extensive *pueblo*, the city limits embracing an area of thirty-six square miles.

Take the Temple Street car to Beaudry Avenue and walk up the latter street, around the Sisters' Hospital to the white fenced reservoir which you see on the hill. There is no fear of your mistaking your road, for that reservoir is a landmark which is visible from almost any point for ten miles around. It is something of a climb, but you will be rewarded when you get to the top. What a magnificent panorama is spread before you! The city and country for miles around are spread out like a relief map at your feet. A long ridge, thickly covered with residences, extends from Buena Vista to Pearl Street, hiding a great portion of the business center; but through a break in the hill you see the most thickly-settled resi-



Kinneyloa Ranch, thirteen miles east of Los Angeles.

dence portion, extending away to the south and southwest, until it is lost in the groves and fields in the distance. To the left, on the very summit of the ridge, the High School, a large, dark-red brick building of stately architecture, stands out prominently. A little to the right of this is the new Courthouse, the highest building in the city, which towers like a giant among the surrounding edifices. Still farther to the right the tower of the City Hall may be seen rising above the trees. The groves of gum trees and stretches of orchards away to the southwest are in Vernon, the beautiful horticultural suburb of Los Angeles. To the left—or east—of the High School the river is plainly seen, winding between its leveed banks, under numerous bridges, through the city and in a tortuous course toward the ocean. On the east and west bank frequent trains of the Southern Pacific, Santa Fé, and Terminal railroads puff along, the sound of their whistles reaching the ear through the clear atmosphere several seconds after the escaping steam of the throttle has disappeared. The numerous large brick blocks on this side of the river are in "Sonora Town," the old Spanish quarter, north of the plaza.

Beyond the river, on a high *mesa* which terminates in a bluff, at the foot of which the river formerly ran, is Boyle Heights, the airy and healthy eastern residence section of Los Angeles. Fifteen years ago you would have seen little more than a couple of farmhouses there on the treeless plain. To-day it is dotted over with hundreds of beautiful residences and punctuated with graceful shade trees, while a double-track cable railroad traverses it from the river to the eastern limits of the city. The large brick building on the crest of the bluff, which is almost as prominent a landmark as the High School and the Courthouse, is the Catholic Orphan Asylum. The rays of the setting sun cause the gilt cross on its summit to shine out like the evening star. Near this is now building

the Hollenbeck Home for Old Women, a most beneficent charity. Beyond Boyle Heights, about ten miles to the eastward, is the low range of San José hills. On their eastern slope Whittier is plainly seen. The large white building high upon the hillside is the Whittier High School. The massive building lower down to the right is the Whittier State School. Still farther away, a hundred miles distant in an air line, the dark, gray mass of the Santa Ana range of mountains looms up. Coming back home and looking to the extreme left, a portion of East Los Angeles is seen, embowered in verdure.

Now turn your gaze to the south. The Sisters' Hospital, a quaint, peaceful-looking brick building set in beautiful grounds, lies at your feet. Ten years ago this was "out in the country." To-day it is surrounded by residences and graded streets. Twelve years ago not half a dozen of the hundreds of tasteful residences which you see at your feet had been built. In the distance, to the south, is the range of hills which hides San Pedro and the harbor. Further west, in the plain, is Inglewood, with its avenues of green trees. By their smoke you may watch the course of trains on their way from Redondo and San Pedro to the city. Still farther west is the low range of Ballona hills. Just to the right of where they terminate you may, on a clear day, plainly see the ocean glittering in the sun through a break in the sand banks which line the beach.

The elevated group of large residences near in, to your right, is Angeleño Heights, the highest residence section of the city. Behind, to the west, extends the country between Los Angeles and Santa Monica. The Arcadia Hotel and the gum trees on Ocean Avenue at the latter place may be easily distinguished on a clear day, and clear days are the rule in Los Angeles. To the right of Santa Monica, in the foothills, is the group of buildings composing the Soldiers' Home, where fifteen hundred of the vet-

erans are domiciled. The Cahuenga range of mountains frames the picture on the northwest. Along the slopes of its foothills are dotted here and there a few houses, the precursors of thousands that will be built in this beautiful semi-tropic valley as soon as better means of communication are furnished and the large ranches divided up.

Now go around to the northern side of the reservoir and another beautiful, though very different, scene meets your gaze. The hill upon which you stand slopes abruptly down several hundred feet, its sides covered with a dense growth of white sage, thyme, and laurel, to a peaceful valley, where an old ranch house is set in the midst of an orchard and vegetable garden. A couple of brick-kilns are the only other evidences of human activity. Further down the valley the Jewish cemetery, its white tombs gleaming out from the shades of a sombre olive grove, accentuate the rural character of the scene. Not half a dozen houses are visible, look whichever way you may. If planted down here suddenly, you would never dream that you were within the limits of a city of over seventy thousand population and not over thirty minutes' walk from the business center. Yet this is so, the northern line of the city limits being two miles from where you stand. It is not necessary to inform you after this that the city has been growing in a southerly direction. On the other side of the valley are a succession of wild, rolling hills, one above another, and still farther, closing the background, the dark, rocky Sierra Madre range of mountains, its crest fringed with pine trees, which at the distance look like blades of grass. An opening between the hills allows a few white specks nestling at their base to be distinguished. These are cottages in the *Crescenta Cañada*.

After looking your full upon this fair scene, follow the path along the crest of the hill a distance of about half a mile to the east. You have constantly in view on the right

the populous city and on the left the peaceful valley, with its background of mountains. A walk of twenty minutes brings you to the Downey Avenue branch of the cable railroad at the south end of the viaduct. Boarding a north-bound car, you are quickly whisked over the long viaduct, a remarkable structure, built on single iron pillars, said to be the only one of its kind in the country. Its purpose is to keep the cable road from the numerous Southern Pacific tracks and switches which pass below. Beyond the viaduct on the left is the long freight depot of the Southern Pacific Company, loaded with merchandise of every description. Beyond the freight sheds is the passenger depot. It is now almost deserted, but was a bristling place until seven years ago, when the passenger offices were removed to the new Arcade depot, nearly two miles south. The neighborhood of the old depot has felt the effect of the change, and has rather a woe-begone appearance. All trains on the Southern Pacific, except those to and from the East, still stop at San Fernando Street.

A ride of a few minutes more and the Los Angeles River is crossed over an elevated bridge. During the summer season it is a narrow stream, which a good vaulter could leap over, and the unsophisticated stranger looks with wonder at the big levees on each side of the wide, dry bed. Let him visit it, however, in winter, after there has been a heavy rainfall in the mountains, and he will see a deep, swiftly moving torrent, filling the river bed from bank to bank, and frequently carrying down a mass of driftwood and big timber. When the Los Angeles River, innocent-looking as it is, has gone on a rampage, there have been anxious times for the residents along its banks, to whom the completion of the levees came as a welcome relief.

The visitor is now in East Los Angeles, one of the prettiest residence sections of the city. As the car moves

up Downey Avenue, a broad thoroughfare lined with graceful pepper trees, the tasteful residences on either side, set back in lovely gardens and half smothered in climbing vines, can not fail to arouse admiration. Just before reaching the end of the track alight and take a road on your left—Thomas Street—which mounts gradually up a ridge of high hills, on the summit of which stand a few gum trees. There is a good path, and a climb of fifteen minutes or so brings you to the summit, where you may enjoy the finest view to be had in or near the city. You are here much higher than at your previous point of observation. The city as seen from this hill makes a different picture. It is more at a distance and you see much of it that was hidden from your former “coigne of vantage.” Stretching away from the foot of the hill upon which you stand, East Los Angeles looks like a vast forest or park, so thickly is it embowered in shade trees. To your left you get a fine view of Boyle Heights. On the north and east the scenery is striking in the extreme. Cutting its narrow passage through the high hills from the north, flows the Los Angeles River. You can trace the valley as it opens out toward Burbank, above the mouth of the Arroyo Seco, adown which ravine comes the mountain stream of that name from Pasadena, a portion of which city is visible. In the background are a succession of mountains, ending in the Sierra Madre, which from this point appears quite near. There rises in the mind of the beholder the thought: What a magnificent site for a big hotel! A branch cable track could easily be run up this hill from Downey Avenue. A resort here would soon become world-famous. Right here it should be remarked that there are few cities in the world that offer so many picturesque building sites and grand views as does Los Angeles. A month may be spent in explorations and still fresh beauties be found.

If you had time, by going a little beyond the cable

road terminus you would come to a pretty little lake, set in a framework of hills; but this would extend the trip beyond the limits of a day. Therefore return to the point at which you left the car and ride back to town. You will now take a ride of six miles in one direction without leaving the city limits. After recrossing the viaduct you pass through "Sonora Town," an interesting Spanish adobe section, once *the* Los Angeles, now mostly composed of dilapidated adobe houses, interspersed on the main thoroughfare with large brick warehouses. Toward the plaza the Chinese divide the retail business with the *paisanos*. This is old Los Angeles, the Los Angeles of '81 and '51, and is rapidly passing away. It would have disappeared much more quickly were it not for the fact that the city is growing in the other direction. The car jolts you as it makes a sharp turn, and you are at the plaza. This is the geographical center of the city, and twenty years ago was an important center of business, before Spring Street was thought of as a prominent business thoroughfare. In the center of the open space is a little circular park with large rubber trees that have a stately appearance. On the right is the long, low plastered Catholic church, erected, as an inscription tells, by *los filiales de esta parroquia* to the Queen of the Angels in 1861. It was built much earlier, but was repaired in that year. On the south of the plaza is Chinatown, a section of the celestial kingdom set down in California. The strangeness of the sights here is only exceeded by the strength of the smells which emanate from the celestial region below and rise to the heavens above. At the southeast corner of the plaza is the Pico House, twelve years ago the leading hotel of the city. A year ago you might have seen Don Pio Pico himself, the venerable nonagenarian ex-Governor, seated in front of the building, both alike relics of former and, to them, more flourishing days. A little farther south, on Main Street, is the Baker Block, for many years the chief business building in Los

Angeles, and still standing forth as an imposing edifice of pleasing architecture.

At the Temple Block the car passes into Spring Street, rivalling Broadway as the leading retail business street in the city. Here all is bustle, and fine business blocks multiply. The Phillips Block on your right, a little north of First Street, is especially noticeable. On a Saturday afternoon and evening Spring Street, from Temple Block to Third, presents a lively and attractive scene, with its brilliantly lighted stores and dense crowd of purchasers and promenaders on the sidewalks. At the corner of Spring and First Streets the car turns into the latter thoroughfare, where the Boyle Heights line branches off. This is at present regarded as the business center of the city, and a busy place it is, cable and electric cars constantly coming and going, besides a multitude of other vehicles, while the sidewalks are thronged with hurrying pedestrians. At the southwest corner is the Nadean Hotel. One block westward on First Street and the car turns into Broadway. At the northeast corner, unique in its architecture, is the castellated granite abode of The Times. Broadway, formerly called Fort Street, after an old fortification on the hill which you see to the north, is the coming retail business street of Los Angeles, a handsome thoroughfare, smoothly paved with asphaltum. First Street hill is being cut through to the west. On Broadway are many handsome buildings. Two blocks north of First Street is the imposing Courthouse which you passed when you started out on your trip up Temple Street this morning. Proceeding southward, at Second Street you will perhaps see one of the swiftly-gliding cars of the electric railroad pass. At the southwest corner of Second Street and Broadway is a very handsome block, on a part of which the Young Men's Christian Association has its home. The architectural features of this building are striking. A little farther south is the new City

Hall, an imposing structure, patterned after a German town hall of the Middle Ages. At the corner of Third Street is the large Bradbury Block, and at the corner of Fourth Street the Chamber of Commerce Building, which is well worth a visit. At Sixth Street you will catch a glimpse of a little park a block west of that street. It is the most tastefully improved open space in the city, and furnished with plenty of seats for the wayfarer. The large brick building in the rear, at the head of Fifth Street, is the Normal School.

At Seventh Street the car runs west for three blocks, and again turns south on Grand Avenue, where the Seventh Street electric line branches off to Westlake Park. Grand Avenue, formerly known as Charity Street, is one of the most fashionable residence streets in the city, having many imposing houses, but the visitor from an Eastern city will probably admire this street less than some others where more time and expense have been lavished on the grounds and a little less on the buildings. In a city which contains over thirty thousand acres there is little excuse for putting a fifty-thousand-dollar house on a fifty-foot lot. The large building at the corner of Washington Street is St. Vincent's College, the Roman Catholic institution which was removed there several years ago, when the old site on Sixth Street came into demand for business purposes.

Get off at Adams Street and walk a few blocks west. Adams Street for a couple of blocks west of Figueroa is undoubtedly the most beautiful street in Los Angeles, and it is doubtful if it can be surpassed anywhere. The lots are all large, as they should be in this city, running into acres instead of front feet. Large drooping pepper trees hang over the cement sidewalks, on the outer edge of which is planted turf. The residences—large buildings, each with an architectural individuality of its own—are set well back from the street in carefully-kept grounds,



A Los Angeles Residence.

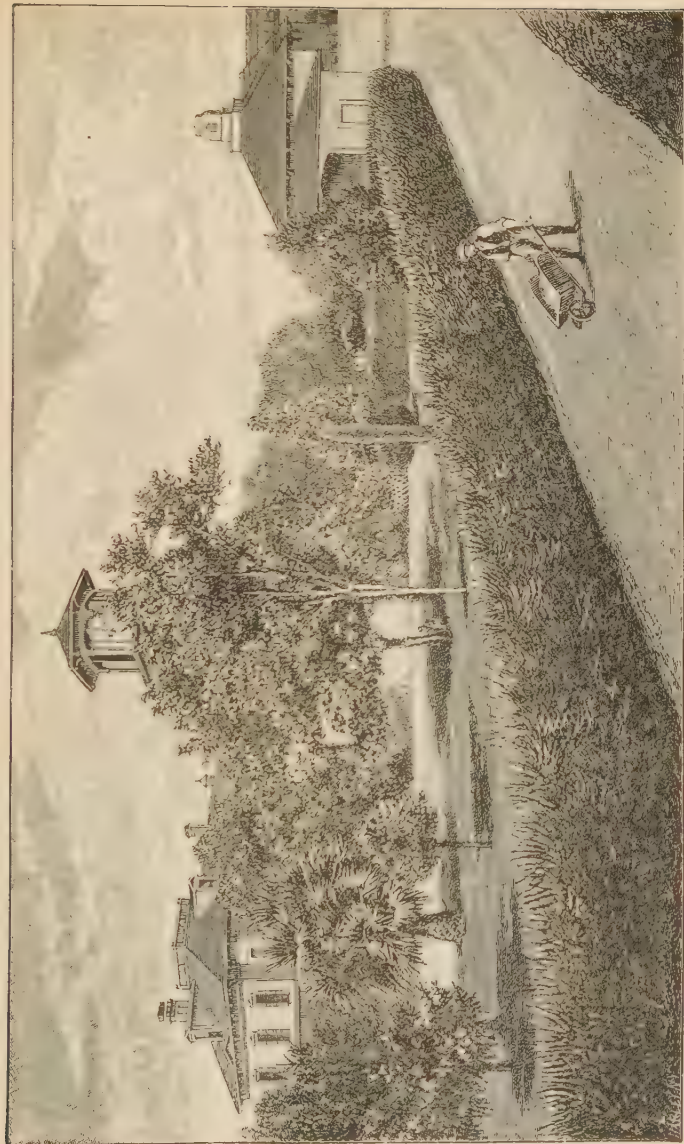
which are realized dreams of semi-tropical beauty. Large date and fan palms, grevillas, magnolias, orange, and other graceful trees cast their shade upon park-like lawns of brilliant green; roses, jasmine, and heliotrope cover porches, trellises, and carriage houses; flaming geraniums and snow-white calla lilies form big hedges, and morning-glories wantonly climb to the very top of tall evergreen trees, hanging from the branches in graceful festoons, while lovely flowers of every hue grow in such lavish profusion as to need, not encouragement, but constant repression at the hand of the gardener. It must produce a curious impression upon the visitor from the snow-clad plains of Minnesota and Dakota, as he views this scene on a winter day, while a southern sun invites him to court the shade. Such a picture does more missionary work for Southern California in five minutes than a ton of pamphlets filled with climatic statistics can accomplish in as many years. There are scores, if not hundreds, of houses in Los Angeles as beautiful as any of these, but in other places a vacant lot with neglected trees, or a vulgar building atrociously colored, will intervene to mar the picture. Here there is no break in the vista of beauty, and the result is a scene which delights while it rests the eye at the same time, showing what can be accomplished here when taste and wealth go hand in hand.

Figueroa Street, to which you now return, is the *bon ton* residence street of the city. It and its northern extension, Pearl Street, extend for nearly five miles from north to south. On this street are to be found some of the handsomest residences in Southern California, many of them standing in grounds of rare beauty. You can take an electric car to Seventh Street and Broadway, where you can board a Seventh Street car for Westlake Park. Seventh Street is another favorite residence street and is destined to become an important thoroughfare, as it extends from the western to the eastern city limits. It is elevated,

which, to many, gives it a preference over the southwestern part of the city. Westlake Park, on the western city limits, is a pretty, breezy spot. It will gain much in beauty after the trees shall have attained a larger growth. The lake is well provided with boats, which are liberally patronized, and a band plays once a week. A climb of a few minutes up one of the surrounding hills will reward you with some expansive views of the country between Los Angeles and the ocean.

Returning to the car, you may now take another little ride of about six miles from west to east. After passing the business center the car proceeds down East First Street three quarters of a mile, crossing the river on a fine elevated viaduct. Down below, on the right, is the Santa Fé station, an attractive building of the early Mission style. From Boyle Heights you get a good view of Los Angeles from the east. This suburb has settled up rapidly since the cable railroad was opened. An electric road will soon be built. On Boyle Avenue, at the top of the bluff near the river, are some beautiful homes, which it would be worth your while to walk by if you had the time. High elevation and gravelly soil make Boyle Heights a specially desirable residence section from a hygienic point of view. The engine house is soon passed and the car comes to a stop at Evergreen Cemetery.

Returning by the same car, get off at Spring Street and take the electric car for Vernon, a distance of about three miles to the south, passing on your way the Arcade station of the Southern Pacific. Vernon is a beautiful suburb, whose orchards and vineyards were fortunately not cut up into town lots during the boom. Much of the fruit consumed in Los Angeles comes from this section. There are few grand houses, but cozy cottage homes, half buried under great shade trees and surrounded by heavily bearing orchards of oranges, peaches, apricots, pears, and other fruits, which, with berry patches and alfalfa fields,



Residence, Adams Street, Los Angeles.

make the happy owner of five acres here much more independent than some owners of a fifty-foot lot on Figueroa Street or Grand Avenue who lie awake o' nights wondering where they shall raise the money to pay off their mortgages. Striking instances of what may be accomplished on a few acres in Southern California may be



Dragoon Palm.

found at Vernon. Of late a vast amount of building has been done in the Central Avenue section this side of Vernon, several hundred fine residences having been erected during the past year.

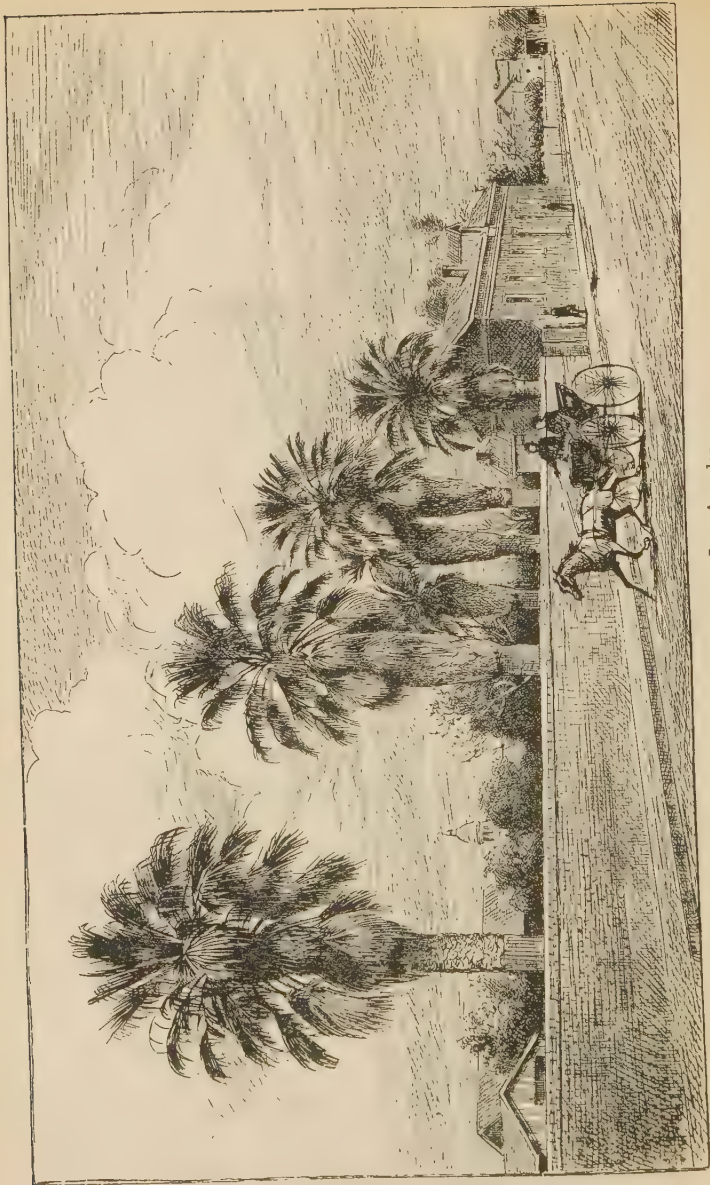
Returning to the city, you have now finished your first day's ride as laid out for you, and being probably by this time rather tired, we shall only ask you to lunch and then walk down Main Street as far as Fifth, passing the Catholic Cathedral, the Westminster Hotel, and the Federal Building—a building which requires enlargement beyond the original plans. A larger appropriation is expected, and a Government building befitting a city of the size and prospects of Los Angeles. Turn up Fifth Street into Spring and walk back along that street to First, noticing the massive Bryson-Bonebrake Block at the corner of Second Street.

On another day you should take the electric car from Spring Street to the end of the line beyond the University, passing through the most thickly settled residence section of the city, most of the building in which has been done within the past five years.

Another trip that should not be overlooked, and which can be made within an hour, is to the oil wells, about a mile west of Spring Street. These can be reached either by the First Street electric or the Temple Street cable line in ten minutes.

The Pacific and Pasadena electric cars leave Fourth Street, between Spring and Broadway, every fifteen minutes, and quickly reach the beautiful city of Pasadena, the round trip being made in two hours.

You have now obtained as good a general view of Los Angeles as it is possible to get within a couple of days, missing no important features, at a total cost of not more than seventy-five cents for car fares. The impression made upon you can scarcely fail to be a favorable one, but it will lack the element of wonder which overcomes those who return to Los Angeles after an absence of ten or even five years. If your time permits, you may, as aforesaid, travel around within the city for a month and see something new every day. The discovery of dainty homes that are beau-



San Pedro Street, Los Angeles.

ty-spots, and new and strange vegetation, will reward such fresh exploration. Much of Los Angeles is almost a *terra incognita* to many of our own residents, in spite of the fact that rapid and frequent transit has to a great extent annihilated distance.

The Los Angeles Crematory.

Los Angeles is not behind other cities of its size in regard to cemeteries, of which there are five. The Roman Catholic Cemetery is beautifully located on an elevation on Buena Vista Street, just overlooking the Southern Pacific depot. The City Cemetery is situated on Castellar Street, between Bellevue Avenue and Sand Street. The Hebrew burying ground is on Reservoir Street. These three are old cemeteries, and are near the center of the city. Chief among the new places of sepulture is Evergreen Cemetery, on Aliso Avenue. It is reached directly by the First Street railway. The Rosedale, on West Washington Street, can be reached by the electric railway. At the Rosedale Cemetery there is the only crematory in the United States west of the Rocky Mountains. It was built by the Los Angeles Crematory Society, under the supervision of an expert who came for that purpose. The first incineration took place in June, 1887. The body, which had been regularly interred a few months previously, was that of the wife of Dr. O. B. Bird, a prominent homœopathic physician. The cremation was a complete success, and attracted as much attention as the most sanguine friend of the movement could have wished. Dr. Bird took his wife's remains, now reduced to a few ashes, in a little package and went a short distance out to sea, where he cast them solemnly upon the breast of the great Pacific. The boatman whom Dr. Bird had employed was very much excited at such a mysterious manœuvre, and with some friends returned to the spot and did some fruitless dredging.

Los Angeles a Cosmopolitan City.

Los Angeles is cosmopolitan. Almost every nation under the sun is represented. The genuine American, who talks plain English with Yankee modifications, is the controlling element whenever he asserts himself, but there are also many foreigners here. One of the best foreign elements is the Irish. While Eastern cities complain of ignorant Irishmen, Los Angeles can boast that many of her most intelligent citizens are from the Emerald Isle.

Hon. John G. Downey, an Irishman who lived and died in Los Angeles, was one of California's noted Governors, having had the helm of state at the beginning of the war, when he evinced his patriotism and ability by successfully thwarting the designs of the numerous Pacific coast Southern sympathizers.

Hon. E. F. Spence was another Irishman who spent the last quarter century of his life in Los Angeles. He was Mayor of the city, president of one of our leading banks, and foremost in educational and philanthropic enterprises.

Hon. Andrew Mullen, Treasurer of the Los Angeles Chamber of Commerce, President of the Board of Trustees of the Whittier State School, and one of our leading merchants and bankers, is another Irishman who reflects credit on both his adopted city and his native isle.

There are Irish lawyers, Irish clergymen, Irish doctors, and Irish merchants, who are a credit to the land of their adoption.

Of Germans there are many. They support two excellent papers and rank among our most progressive people. The Turnverein Society is a rich and influential German organization. The German Lutheran Church, corner of Eighth and Flower Streets; the German Methodist Episcopal Church, on Fourth, between Hill and

Broadway; and the German Evangelical Church, near the corner of Olive and Seventh Streets, are all quite wealthy organizations and completely out of debt. Hon. L. J. Rose, a native of Germany, has been the State Senator from Los Angeles; and Isaias W. Hellman, also a native of that country, is a member of the Board of Regents of the California State University and one of the leading financiers of the State. Although Scandinavians instinctively seek a colder clime, yet there are several hundred of them here, with their churches and societies. The French are here in large numbers. They comprise all classes, from the ignorant Breton who labors on the streets to those who were high in the graces of Napoleon III and bear titles of nobility. Two weekly papers are published in the French and one in the Basque language.

There are several thousand persons of English birth residing in Los Angeles and vicinity. Their native land is ably represented here by Hon. C. White Mortimer, Esq., British vice-consul, whose office is in Temple Block, corner of Maine and Market Streets. The Queen's Jubilee was celebrated in Los Angeles with great *éclat*. D. Freeman, Esq., a wealthy member of the English colony, is one of the best-known and most popular citizens of the county.

Canadians are very numerous, and almost all have, soon after their location here, become citizens of the United States. The late Hon. P. Beaudry, formerly of Montreal, was Mayor of Los Angeles; Dr. H. Nadeau has been Coroner of Los Angeles County, and President of the Los Angeles County Medical Society. W. W. Robinson, a native of Nova Scotia, has held several important public positions, was for eight consecutive years city auditor, and for six years Mayor's clerk. There are also several hundred Scotchmen in Los Angeles, and they have a Caledonian Club, where the bagpipe rends the atmosphere with its alleged music.

The Spanish-speaking population has already been referred to. Scores of them have held important positions, from that of Congressman down to that of constable, and their records in these places have ever been honorable and praiseworthy. The names of Del Valle, Coronel, Dominguez, Pacheco, Sepulveda, and Estudillo will always hold an honorable position in the annals of California del Sur.

The Chinese are a prominent factor in the population of Los Angeles. There are between two and three thousand of them. They were formerly very extensively employed as servants for general housework, but latterly trained white and colored servants are gradually taking their places. The Chinaman, as a rule, with occasional exceptions, is not desirable help. He is dishonest, generally insolent, and, after making the rolls and dessert for the family dinner, spends his nights gambling in the dirty hovels of Chinatown. The family relation is almost unknown to the Chinese in America. Their associations are of the vilest kind. They are in a condition of peonage, being owned body and soul by one or another of the Six Companies, which imports them to this country.

Each morning every house in the city is visited by a Chinaman with his one-horse wagon loaded with vegetables and small fruits. The laundries run day and night, Sunday and week day. The butchers deal principally in pork, which is the Chinaman's chief meat. The merchants deal in Chinese specialties, and do also a private banking business. The restaurants are not extensively patronized by whites. The porky, greasy, nauseating smell is too much for the average Caucasian stomach. Then, again, the Chinaman, when he wishes to remove the feathers of a chicken, has a peculiar way of putting the live fowl into boiling water. This may shock the nerves of the sensitive American, but the Mongolian has a special gleam of delight in his almond eyes as he watches

the chicken squirming in the kettle. The opium-joint is a typical Chinese institution. There are probably a hundred of these vile dens in Los Angeles, where Chinese, white prostitutes, and fast young men spend night and day smoking opium, or, as it is technically called, "hitting the pipe."

The Chinese present a great field for missionary work. The Methodist Episcopal and Presbyterian churches have missions in Los Angeles. A clergyman, who has been a missionary in China and in California, says, "Twenty dollars will do as much toward converting Chinamen in China as one hundred dollars will in California." He says the difficulty is that, when they come to the United States, they are bent solely on making money and returning to the Flowery Kingdom. They have no time for religion, and attend the missions, not through religious interest, but to learn the English language, and thereby increase the value of their services.

Every tourist should visit Chinatown twice—once in the daytime and once at night. The best way to see the sights at night is to obtain the escort of a policeman, who will always be able to conduct him through the opium-joints, gambling houses, and other dens of Chinese iniquity.

Religious and Educational.

It may without boasting be said that there are few cities in the United States of equal size which can offer as good religious and educational facilities as Los Angeles. Many of the best teachers of the United States are attracted here. The course of study in the public schools extends over a period of twelve years—from the kindergarten, through the high school, whose graduates are fit to enter the State University. Over one thousand of the census school children of the city attend private schools.

The Los Angeles High School, one of the finest build-

ings in the city, offers a liberal course of study, supplementing and extending ordinary grammar-school work. In the building are about twenty-five rooms, including gymnasium, lunch rooms, library, laboratory, auditorium, etc.

The California State Normal School, which stands on a site of five acres, donated by the citizens of Los Angeles, is one of the most prosperous institutions of learning on the coast. The entire course—embracing English literature and language, the sciences and arts—requires three years. Two classes are graduated annually—in May and December. The State school laws favor graduates of the normal schools to the extent of issuing them teacher's certificates on presentation of their diplomas. The training school, consisting of a department of the city public schools, which is connected with the institution, enables the undergraduates to acquire practical experience in conducting classes. The faculty is composed of the most efficient educators to be obtained. The work of the teachers is greatly facilitated by the liberal way in which the school is equipped with many valuable instruments necessary to properly conduct the course of studies, and a judiciously selected library.

The work of the school throughout Southern California is supplemented by a large number of specialists in music, painting, and every department of art. There are three excellent gymnasiums in Los Angeles, where classes of young people and adults are taught. Two extensive and thoroughly equipped business colleges prepare a large number of young men and women for the practical work of life. With one of these institutions there is affiliated a complete law school.

There are a number of colleges in Southern California, founded by religious bodies and others, which compare favorably with anything of a similar description in the East.

The University of Southern California opened its doors October 6, 1880. The principal university buildings are in West Los Angeles, on Wesley Avenue, and may be reached by the cars of the electric line. There are here two large buildings—one a frame structure occupied by the College of Music, the other a massive brick edifice occupied by the College of Letters. In the former the faculty consists of four, and in the latter there are ten professors and instructors.

The College of Medicine of this university, which has been in successful operation for over ten years, is located near the center of the city of Los Angeles, in their new capacious building on Buena Vista Street. J. P. Widney, A. M., M. D., is dean. The faculty numbers eighteen physicians and teachers. This institution requires a course of four years. Its regular session begins the second Wednesday in October and closes the third Wednesday in April. The intermediate session opens the first Wednesday in May and closes the last Wednesday in June.

The Presbyterians, Catholics, and Baptists also have colleges. That of the latter sect, west of the city limits, has recently been affiliated with the University of Chicago. The Friends (Quakers) have a college at Whittier, and the Dunkards have a college at Lordsburg.

It only needs a glance from one of the hills to convince any one that Los Angeles is a religious city. On every side church spires and towers may be seen peeping out among the trees. There are sixty church organizations in Los Angeles, representing all the denominations in the country. Most of the religious bodies have attractive and comfortable, and in many cases very ornamental, buildings. Among the denominations the Methodist Episcopal is in the lead from a numerical standpoint, having fifteen churches; the Presbyterian and the Congrega-

tional come next, with seven each, while the Catholics have five.

The Los Angeles Public Library, located in the City Hall, is well known by reputation among the librarians of the country as one of the most progressive and efficient libraries of any city of equal size in the United States. Recently there were 13,495 people enrolled as active members, who drew for home use 267,054 volumes. This places Los Angeles eighth among the great cities of the country in the number of volumes circulated for home use, it being ahead of Cleveland and Cincinnati.

The benevolent associations of a city give a good idea of the character of its citizens. Judged by this standard, Los Angeles ranks high. The Catholic Orphan Asylum, one of the most imposing buildings in the city, occupies an elevated site on Boyle Heights. It is one of the oldest institutions in Los Angeles, but has only been in its present location about two years, and is doing a large amount of good work. Among such establishments is the Protestant Orphan Asylum, which is now in its fifteenth year; the large brick building was erected in 1887. The average number of inmates has been about one hundred and fifty, a majority of whom are boys. The State pays seventy-five dollars a year each for half-orphans and one hundred dollars for full orphans, the balance being raised by voluntary contributions.

The Young Men's Christian Association occupies a floor and basement in the building at the corner of Second Street and Broadway. It is doing active and successful work, and is steadily growing in membership. Concerts and lectures are given to members. There are also free evening schools under good teachers. The gymnasium is one of the best in the State; it and the baths are largely patronized. Religious work keeps pace with the other departments.

The Young Women's Christian Association has been

recently organized, and has become quite popular. Like the Young Men's Christian Association, it is open to all persons of good moral character, whether they belong to any church organization or not.

One of the most active charitable organizations in the city is the Ladies' Benevolent Society, organized about fifteen years ago. This society is supported entirely by voluntary contributions, its object being to relieve all kinds of distress. Clothing and employment, as well money, are furnished to hundreds of persons annually.

A movement for organized charitable work was started in Los Angeles a few months ago under the name of the Associated Charities. The membership is only one dollar a year. The object is to systematize the work of charity so that the greatest possible good may be done with the smallest amount of money, and at the same time that worthy cases may be separated from those which are undeserving.

The Los Angeles Humane Society, composed of the Society for the Prevention of Cruelty to Children and the Society for the Prevention of Cruelty to Animals, is very efficient.

The Florence Home is a refuge for wayward girls who desire to lead another life. Quite a number have already been assisted.

The News and Working-boys' Home and free reading room was established in 1890 by a young man who came to the coast from Chicago with Moody, the evangelist. Since then it has been much enlarged. The boys are taught to be independent and to look upon their relation to the home as a purely business one, a small charge being made for meals and lodging. The Home is managed by a matron, assisted by a number of benevolent society ladies.

The Flower Festival Boarding Home on East Fourth Street is an institution which has accomplished a great

amount of good. The idea is to furnish a comfortable home for self-sustaining young women, who pay a rate in accordance to the wages which they receive. There is accommodation for sixty boarders, who at a very moderate rate enjoy the privileges of wholesome meals, cheerful rooms, the use of a sewing machine, piano, small library, etc. The Society of King's Daughters is an active one in Los Angeles; it was organized in 1888, with Mrs. Eliza A. Otis as president.

There are other worthy charitable and benevolent societies whose operations are confined to certain classes for whose benefit they are specially intended. Among these may be mentioned the British, French, and Italian Benevolent Societies, the German Ladies' Benevolent Association, the Italian United and Fraternal Garibaldi Society, the Ladies' Auxiliary of the Young Men's Christian Association, and the Los Angeles Association of the Deaf.

Secret and fraternal organizations abound in Los Angeles. Among the orders showing the greatest strength, both in lodges and point of membership, are the Masonic fraternities, the Odd Fellows, Workmen, Hibernians, Knights and Ladies of Honor, Elks, Catholic Knights of America, Chosen Friends, Grand Army of the Republic, Military Order of the Loyal Legion, Red Men, Good Templars, Knights of Pythias, Maccabees, and Native Sons of the Golden West. Other orders are the Native Daughters, Modern Woodmen, Sons of Veterans, Royal Arcanum, Sons of Herman, Knights of the Golden Eagle, Knights of Robert Emmet, B'nai B'rith, and Independent Order of Foresters.

The Los Angeles County Medical Society was organized January 31, 1871, with Dr. John S. Griffin as president. The presidents since then have been Drs. R. H. Dalton, Joseph P. Widney, Henry Sayre Orme, Joseph Kurtz, Walter Lindley, H. Nadeau, W. G. Cochrane, F.

A. Seymour, Andrew McFarland, F. T. Bicknell, G. W. Lasher, W. L. Wills, J. H. Davisson, M. L. Moore, W. W. Hitchcock, William Dodge, D. G. MacGowan, O. D. Fitzgerald, and Henry G. Brainerd.

The membership includes the best of the regular school of physicians, some one hundred and ten in number. The meetings are held the first and third Friday evenings in each month in the assembly hall of the Chamber of Commerce, corner of Broadway and Fourth Streets. Dr. J. S. Griffin, the first president, is still a Los Angeles practitioner. He graduated at the University of Pennsylvania in 1837, entered the United States Army as assistant surgeon, and, after serving in Florida and New Mexico, came to Los Angeles as chief surgeon of General Kearny's forces.

The doctor is now nearly eighty years of age, the Nestor of the medical profession of Southern California. His family was noted in Virginia, his native State. One of his sisters was the wife of the late General Albert Sidney Johnston, and now lives in Los Angeles with her two sons and one daughter.

The Southern California Homœopathic Medical Society meets on the second Wednesday in October each year. Dr. J. S. Hodge, of Pasadena, is president, and S. Worcester, of Los Angeles, secretary.

Parks.

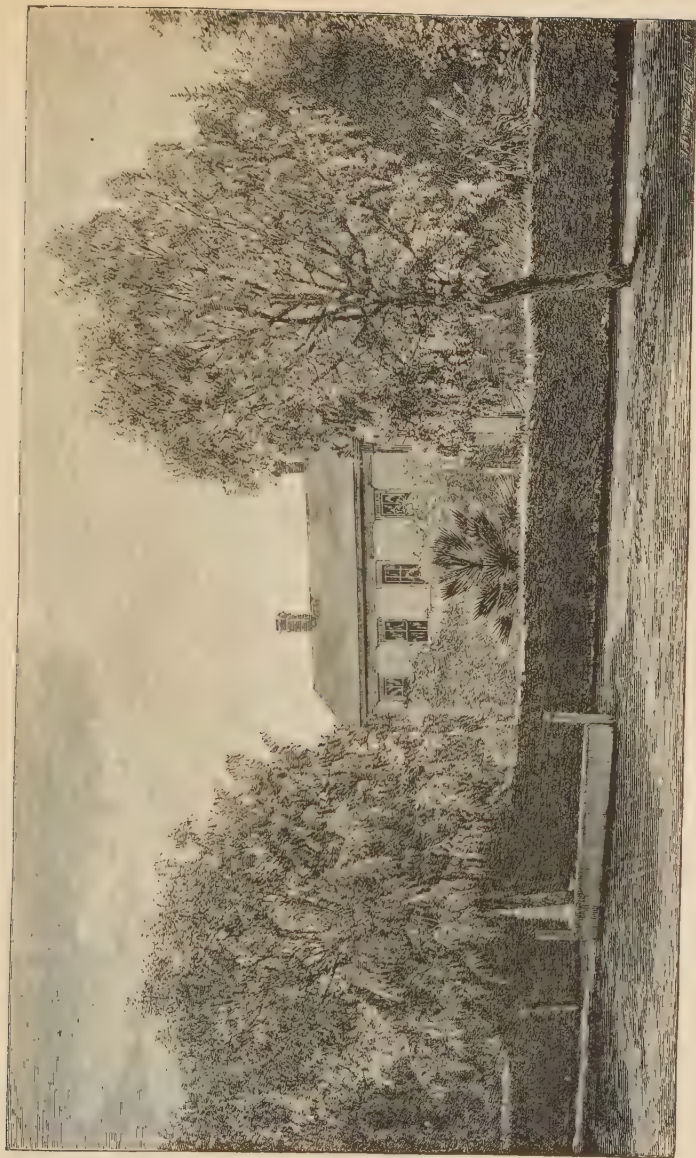
In the line of parks it must be confessed that Los Angeles has not yet made so much progress as might have been wished. As against this it must be remembered that it is only a few years since the whole surrounding country was open and park-like, so that the people did not feel the necessity for any artificial breathing place. A beginning is, however, being made in park improvement. The people are awakening to the importance of the question.

The city has given away enough land to make a dozen large parks, and now it has nothing more to give. Whatever is further acquired must be by purchase or donation. Every year land becomes more valuable, and what is done in this direction will have to be done quickly. There are seven public parks within the city limits, aggregating six hundred acres, of which five sixths is in Elysian Park.

Westlake Park, thirty-five acres in extent, at the end of the Seventh Street cable road, is the most popular open-air resort in the city, and has received most attention from the Park Commissioners. It has a lake, with boats, music on occasion, fine drives and walks, and grand views from adjacent hills. Much of the soil is alkaline, which prevents vegetation from making such progress as it otherwise would, yet the results achieved in floral growth are very attractive. It is doubtful, however, whether luxuriant vegetation will ever be a prominent feature of this park.

The park in East Los Angeles, commonly called East-side Park, covers fifty acres, and has been made quite attractive. A large grove of eucalyptus has been planted on the side hills. There is a lake in the center of the grounds, grass lawns, and many varieties of ornamental trees—bamboos, palms, lilies, etc. Most of this work has been done during the past couple of years, about fifteen thousand dollars having been expended. Roads have been macadamized and the banks of the lake ripped. In this park are the nursery, propagating houses, and greenhouses from which all the parks are supplied. There is a strip between the park and Reservoir No. 5 about twenty-five acres in extent, which would make a good addition to the park for the purpose of growing semi-aquatic plants.

Prospect Park, on Boyle Heights—also on the east side of the river—is a beautiful place, though small, covering only a city block. There are extensive views of



A Country Home near Los Angeles (Pepper Trees in foreground).

mountain and valley scenery, and the square is adorned with many choice trees and shrubs. In a small pond are water lilies, including the *Nymphia arosca* and *Victoria regia*.

The oldest and best improved of the city parks—except the place known as the Old Plaza—is the Sixth Street (Central) Park, which occupies a city block only, but is a gem, and a good example of what can be done here in this line. The park is well provided with benches, which are generally occupied. This park will be before many years in the center of the retail business section of the city.

The old circular Plaza—the geographical center of the city—is kept in good order. A public market is held around this space in the early morning hours.

Elysian Park is the only park of considerable size, a remnant of the thousands of acres of such land which the city formerly owned. It may safely be said that this tract offers the greatest possibilities for a diversity of growths of any piece of ground within the limits of an American municipality. Much of the land is within the frostless belt of the Cahuenga foothills. The views of mountain, valley and ocean, city and plain, are grand in the extreme. At present the park is almost in a state of nature, except that over fifty thousand eucalyptus and other trees have been planted and a road graded through it. There are possibilities in this unique park site (for it is little more at present) which strike all newcomers, and wonder is often expressed that so little has been done to develop the natural attractions of this beautiful tract. One of the chief reasons why so little has been done as yet in this direction is that Elysian Park is at present not very easily reached by the street-car systems, and consequently it is not frequented by the masses of the people as it might be. There is, however, a growing feeling among the citizens that a large portion of the future park appropriations

should be spent upon Elysian Park, and there is no doubt that the next few years will witness a great transformation in the appearance of the tract.

Hollenbeck Park is a tract of about twenty acres on the east side of the river in Boyle Heights, which was presented to the city a few years ago by Mrs. Hollenbeck. It has been improved with shade trees and a lake has been formed in a natural depression. It is a small park, but promises to become a very attractive one after the vegetation shall have attained a greater growth.

A proposition is being considered to enlarge Elysian, Westlake, and Eastside Parks by the addition of some adjacent territory; also to construct a wide boulevard connecting Westlake and Elysian Parks.

Manufactures in Los Angeles.

Hitherto the development of the manufacturing industry in Los Angeles has been retarded by the high price of fuel, coal costing about ten dollars a ton. The discovery of a large body of petroleum within the city limits, of which a description is given on another page, has wrought a great change, and many manufacturers in all parts of the country now have their eyes directed this way.

Crude petroleum is fifty cents per barrel in the Los Angeles market, and, as three barrels of petroleum is equivalent to one ton of coal, it makes remarkably cheap fuel.

New manufacturing enterprises are beginning to come in fast, as shrewd capitalists note the large profits offered in this field. Southern California has had a pastoral era, a speculative era, and a productive era. From now on much attention will be given to the working up of our numerous and valuable raw products.

During the years past half a dozen important manufacturing enterprises have been inaugurated in Los An-

geles alone, including a smelter (not yet completed), a pork-packing establishment, and a rolling mill.

Among the most important articles that are made here may be mentioned iron castings, iron and cement pipe, machinery, brick, canned and dried fruits, boxes, flour, crackers, soap, doors and sashes, mineral waters, beer, wine, brandy, furniture, candy, pickles, ice, and sugar.

The present article will be mainly devoted to a glance at the openings for manufacturing enterprises in Southern California, which are so numerous and attractive.

First should be mentioned the utilization of our fruit products by canning, drying, crystallizing, and making into jam. There are several factories of this description, but the industry is capable of almost indefinite extension. Especially for crystallized fruit is the demand greater than the supply, at high prices. The only crystallizing fruit factory on a large scale in the United States is located in Los Angeles, and produces a fine article. The by-products of the orange, which form an important branch of the industry in Europe, have not been utilized at all here, although one small factory has recently been started in Los Angeles to make essential oils.

Potato-starch factories should pay well in Southern California. Several olive-oil mills have been built, and others are contemplated.

Sugar from beets has been made for two years at the large Chino factory in San Bernardino County, which last season utilized the product of over four thousand acres. A co-operative beet-sugar factory, of about equal size to that at Chino, is about to be built near Anaheim, in Orange County, and another near Long Beach, in Los Angeles County. With a climate permitting work to be carried on three times as long as in Europe, and many thousands of acres adapted to beet culture, there should be at least a dozen more beet-sugar factories in

Southern California. The profits of such an enterprise are large.

There are several creameries and cheese factories and room for more, large quantities of butter and cheese being still imported from the East. Nearly all the ham and bacon consumed in Southern California is also imported, but this will soon be changed, now that the pork-packing establishment in Los Angeles, with a capacity of one hundred and fifty thousand hogs a year, is completed.

The castor bean grows all over the country and becomes a tree within a year, yet we have only one small castor-oil mill, started a few years ago in Los Angeles. Linseed oil could also be profitably manufactured on a large scale.

Though pickles are made here, we still import car loads from Europe, which should not be, as cucumbers, onions, beets, tomatoes, peppers, and other vegetables bear all the year round, and yield immense crops. With tomatoes delivered at the factory at eight dollars a ton, we should build up an export trade in tomato catsup, which is now made here only for home consumption.

Right within the city limits of Los Angeles are hundreds of thousands of tons of fine glass sand, from which, at an experimental test, excellent glass has been made. Fifty thousand dollars would liberally equip such a factory, yet we import all our glass from the East.

Immense quantities of rawhides are shipped East, and reimported as shoes, saddles, and harness. There is only one small tannery in this section. We should prepare here calfskins and kipskins, also sole and harness leather. In shipping hides the stock could be culled and the "runners," or lean hides, worked up into "lace leather." What are known as "ranch hides"—those produced on farms where a few animals are kept—can be purchased at a nominal price. The expense for tallow and neat's-foot oil in the manufacture would be less than in the East. There

is some tan-bark oak here, and larger quantities in Lower California. The extract can also be imported from the Pennsylvania and West Virginia forests, where it is prepared. A shrub, called canaigre, also grows, from which a good substitute for tan-bark is made.

A harness and saddle factory and a shoe factory would soon follow such a tannery. At present both these articles are made only on a limited scale. A small shoe factory has been established at Alhambra, in Los Angeles County. The lower grades of shoes might be made here at first from kips and calfskins, shipping the better grades of hides. There is a large market for harness. The tanning of sheepskins would also be profitable. From hoofs and refuse hides glue could be made; also fertilizers, which are much needed.

Tobacco might be grown and manufactured in many parts of Southern California, where it has already been tested, and a good quality of cigars made from the product.

A little ordinary wrapping paper only is made here. There is a good opening for one or more paper mills, to make manilla and other papers. A vast quantity of paper cuttings are destroyed, also large quantities of rags, while hemp can be grown here profitably. Fine tissue paper for wrapping fruit should be made, and fine wrapping paper from flax.

A ropewalk for the manufacture of cordage would pay.

Working pants, shirts, jackets, and overalls should be made here on a large scale to supply the home market.

There are a couple of small potteries, but most of our milk- and butter-crocks, jam jars, fruit jars, and flower-pots are still imported, in spite of the fact that we have deposits of excellent clay here.

There are extensive deposits of mineral paint in several places, which might be profitably worked up.

From the residue of petroleum, which is produced

abundantly here, might be manufactured a great variety of products, such as coal-tar colors, lubricating oils (made now on a small scale), waterproofing, ink (which is now manufactured in Ventura County), vaseline, benzine, naphtha, and washes for insect pests; also fuel gas, which is largely made from petroleum in the East.

The Pacific Ocean abounds with fish. Salt and dried fish are put up at San Diego and San Pedro, and some mackerel were salted last year on Catalina Island, but the industry is capable of great extension. The canning of sardines, craw-fish, and turtles would be profitable. The latter are found by millions in the Gulf of California.

A brass foundry on a considerable scale, to supply the home market with all kinds of plumbing, gas and steam fittings, is badly needed. There is one in Los Angeles, but the demand for the product exceeds the supply.

There is a good opening for a nail factory, the consumption being very large and scrap-iron plentiful.

There has long been a demand for mineral-reduction works, ores from this section being now sent as far as Pueblo and Kansas City for reduction. Work was commenced in Los Angeles on a custom smelter, but it has not been completed. There is a large field to draw upon, extending over Lower California and Arizona, as well as Southern California. To these sections will soon be added Southern Utah and Nevada, when the railroad to Salt Lake is completed. At present coke for smelting can be laid down to Los Angeles at a much lower rate than in the mining regions of the interior.

One of our leading articles of export is wool, which should be worked at home. There is a fine opening here for several branches of woolen manufacture.

Trade and Commerce of Los Angeles.

There is an idea prevalent among a good many Eastern people, who have heard about Los Angeles that it is sim-

ply a picturesque and attractive city, with a charming climate, which depends, and always will depend, mainly for support upon Eastern consumptives and orange-growing. This is a great mistake. The location of Los Angeles is such as to insure its commercial importance sooner or later, even were the climate far less perfect than it is and did we not grow a pound of fruit.

Hitherto the chief industry of this section has been horticulture, since the days when hides, wool, and tallow were the leading products. Of late, however, the general manufacturing and commercial interests of Los Angeles have assumed much importance. Los Angeles now does an important jobbing and wholesale trade with the southwestern section of the country from Fresno on the north to New Mexico.

The condition of the banks of Los Angeles is very sound, as shown by the latest reports. The banks of the city carry deposits of nearly \$12,000,000, and do a large and profitable business, which is constantly increasing.

The condition of Los Angeles, as shown by the Clearing House returns during the past year, is an enviable one, and has excited attention throughout the country. There has been a steady and large increase in the weekly clearings over the previous year, and this within a time when most of the large cities of the country have shown a decrease. The clearings for the first six months of the present year amounted to \$29,034,165, as compared with \$23,687,498 for the first six months of 1894, showing an increase for the half year of \$5,348,687.

Post office receipts are accepted, and properly so, as a faithful exponent of the business conditions of a city, Such being the case, the inhabitants of Los Angeles have more than ordinary reason to congratulate themselves on the prosperous condition of their city.

The receipts of the Los Angeles post office for the six months ending June 30th show an increase over the pre-

ceding six months that—in all probability, facts not being yet available—no other city in the United States can approach. The figures are as follows:

For the six months ended June 30, 1895, \$87,166.42; for the preceding six months ended December 31, 1894, \$79,294.40. Increase for last half year, \$7,872.02.

This is an increase of within a fraction of ten per cent for the six months, or at the rate of twenty per cent a year.

The building record of Los Angeles for the past six months has been a remarkable one, and it is doubtful whether it could be duplicated in any city of the United States with five times the population of Los Angeles. As compared with San Francisco, the amount of building in July was nearly double as large in Los Angeles as in the largest city in the State, with a population four times as great.

The following remarkable figures, showing the amount of building permits issued and their value for the twelve months of 1894 and seven months of 1895, speak for themselves:

1894.

	Permits.	Amount.
January.....	131	\$133,135
February.....	121	115,145
March.....	158	156,740
April.....	133	222,010
May.....	162	185,210
June.....	149	194,565
July.....	123	233,428
August.....	156	182,957
September.....	170	279,710
October.....	225	269,120
November.....	184	275,707
December.....	117	131,675
Totals.....	1,829	\$2,379,702

1895.

	Permits.	Amount.
January.....	164	\$190,700
February.....	170	260,000
March.....	201	226,822
April.....	186	300,368
May.....	216	363,990
June.....	163	301,295
July.....	245	637,219
Totals.....	1,345	\$2,284,702

Climate of Los Angeles.

This subject will be but briefly mentioned, as the whole ground has been covered *in extenso* in another chapter. The following extracts from a paper read before the Kings County Medical Society, Brooklyn, New York, give a general idea of the climate of this city: *

"All writers on climatology agree that the first requirement of a climate for all classes of invalids is that it shall be equable in temperature.

"Now let us compare the temperature of Los Angeles, which is no better than the average Southern California climate, with that of Boston, which I believe is no worse than the average New England climate.

"From the Signal Service records at Los Angeles for a period of six years I learn that the average temperature of January, the coldest month, was 52° Fahr., while for August, the warmest month, the average temperature was 69.70°.

"The Signal Service records for 1881 of the office at Boston show that the average temperature of January, the coldest month, was 32.60°, while the average temperature of August was 69.90°.

* Southern California: A Climatic Sketch, by Walter Lindley, M. D. New York Medical Journal, October 30, 1887.

thus showing a difference in average temperature of hottest and coldest months in Los Angeles of less than 18° , while the difference between the average temperature of the coldest and the average temperature of the hottest month in Boston is 37.3° . Further, these same records show that the greatest daily range in temperature in Los Angeles was 29° , while the greatest daily range in Boston was 69° .

"With the month of May the dry season begins. This term 'dry season' applies only to the coast valleys. In the mountains there are now and then sharp thunder-storms, and it is at this time that the desert beyond the Sierras has its rainy season.

"I have often from Los Angeles, in the midst of her dry season, witnessed black clouds and vivid lightning, telling me of summer storms east of the mountains. Sometimes even in Los Angeles there is a shower during the summer.

"There is seldom a year in which there are a half-dozen cloudy days between the middle of May and the middle of November.

"I will again refer you to the Signal Service reports of the Los Angeles station, in order that you may have a more positive basis of information than my casual observations:

MONTH.	1879.	1880.	1881.	1882.	1883.	1884.	Average.
January.....	3.59	1.33	1.43	1.01	1.62	3.15	2.02
February.....	0.97	1.56	0.36	2.66	2.87	13.36	3.58
March.....	0.49	1.45	1.66	2.96	2.87	12.36	3.58
April.....	1.19	5.06	0.46	1.83	0.15	3.58	2.04
May.....	9.24	0.04	0.01	0.63	2.02	0.39	0.55
June.....	0.03	0.00	0.00	0.00	0.03	1.39	0.24
July.....	0.00	0.00	0.00	0.00	0.00	0.02	Trace.
August.....	0.00	0.00	0.00	0.00	0.00	0.02	Trace.
September...	0.00	0.00	0.00	0.00	0.00	0.00	0.00
October.....	0.93	0.14	0.82	0.05	1.42	0.39	0.62
November....	3.44	0.67	0.37	1.82	0.00	....	1.24
December....	6.53	8.40	0.52	0.08	2.56	....	3.61
Totals.....	17.41	18.65	5.53	10.74	14.14	....	13.29

"Now we will compare these figures with the rainfall in some other well-known place, as recorded in vol. xxiv, Smithsonian Institution Reports.

Average Rainfall in Inches.

PLACE.	Period of observation.	Spring.	Summer.	Autumn.	Winter.	Year.
Los Angeles.....	5 years.	3.73	0.01	1.91	7.23	12.88
San Francisco.....	20 "	4.80	0.49	2.68	12.32	20.29
Asheville, N. C.....	11 "	.....	.....	.....	.....	40.20
Cincinnati.....	41 "	11.17	12.67	6.29	9.83	42.96
New York city.....	29 "	11.43	13.03	11.20	10.81	46.52
Jacksonville, Fla. ...	13 "	19.01	21.27	13.07	8.66	53.01

"I hope you will notice the amount of rainfall in Los Angeles during winter. It was only yesterday that a prominent physician of New York city expressed great surprise when I told him that there were only from twelve to twenty rainy days in Los Angeles during the rainy season. He said he thought it rained there continuously during that period.

"But your health resort may have a mild and equable temperature, a proper altitude, a pure atmosphere, and yet, if it has not variegated scenery and pleasant social surroundings, the health seeker will die of ennui.

"This is the point in which Los Angeles, as well as many other places in Southern California, is most happily endowed. A thriving city of eighty thousand inhabitants, with satisfactory hotels, boarding houses, and restaurants; excellent schools, ranging from the kindergarten and public school to colleges, a State normal school, and a well-equipped university; a commercial metropolis with the ocean at its door, and the center from which radiate many lines of railroad; with electric and cable roads that noiselessly carry people from the busy streets over the hills to the suburbs; lighted three hundred and forty days in the year by the sun and three hundred and sixty-five nights in the year by electricity; elegant churches, in which worship Roundheads and Cavaliers, the Salvation Army and Unitarians; three theaters fully equal to any in the city of Brooklyn, in which are to be seen during the year all the leading theatrical attractions of America; the home of the rose, where the humblest cottage is surrounded by a perpetual flower garden; where heliotropes and fuchsias clamber to the tops of the houses and there bloom in all their beauty

the year round; and where the bright and cheerful geranium, which you care for so tenderly in your conservatories, is frequently used for hedges and reaches a height of several feet.

"Add to this the fact that Los Angeles is located in a county which produces annually many millions of bushels of barley, wheat, and corn; a county in which there are now growing 2,000,000 orange trees, many thousands of olive, apple, apricot, nectarine, fig, and pomegranate trees—and you will realize that there is variety enough to entertain the most fastidious.

"Beyond all these points of interest are the two that God put there before man planted the fig tree or the vine—the mountains and the ocean. Fourteen miles east of Los Angeles are the Sierra Madre Mountains, and fourteen miles west of Los Angeles is the Pacific Ocean.

"The point that should be emphasized is that the climate of Los Angeles and all the Southern California cities located within reach of the daily ocean breeze is delightful both in summer and in winter. Eastern people have an idea that, because it is a warm winter climate, it must be a hot summer climate.

"A gentleman just arrived in Los Angeles, August 20, 1887, from Lake Minnetonka, says: 'I suffered with heat every day I was at the lake, but here in Los Angeles it is delightful. The thermometer may indicate a temperature as high as at Lake Minnetonka, but the daily breeze from the ocean keeps the heat from being oppressive, while at Minnetonka a person swelters in the shade.'

"The physicians of Los Angeles are agreed that for the average case of incipient phthisis such places as Newhall, San Fernando, La Cañada, Monte Vista, Pasadena, Sierra Madre, Alhambra, Whittier, San Gabriel, Monrovia, Arcadia, and Glendora, all within a radius of thirty miles from Los Angeles, are superior, as they have altitudes of one thousand feet and upward, and have not the humidity of places nearer the coast.

"In conclusion, Los Angeles is a delightful, prosperous city. It has all the commercial activity and phenomenal growth of Kansas City or Minneapolis, a winter climate superior to that of Mentone or Nice, and a summer climate far pleasanter than that of Lake Minnetonka or Bar Harbor.

"Such a climatic and metropolitan combination exists nowhere else on earth."

Los Angeles County, Soledad Township.

Los Angeles County is situated in the southwestern part of California. The center of this county is about one hundred miles from the southern boundary of the State, and about eight hundred from the northern boundary. It extends in a sweeping curve for about one hundred miles along the Pacific Ocean.

The county contains about four thousand square miles. Its assessed valuation for 1895 is \$82,344,330. It is bounded on the south by the Pacific Ocean and Orange County; on the north by Kern and Ventura Counties; on the east by San Bernardino County; and on the west by Ventura County and the Pacific Ocean. A more irregularly-shaped territory could scarcely be plotted. Its greatest length is one hundred and twenty miles, and its greatest breadth seventy-two miles. It is divided into two almost equal parts by the thirty-fourth parallel.

The Coast Range of mountains extends through the county from the northwest to the southeast corner. The traveler will rarely hear the term "Coast Range," however, as these mountains have local names by which residents always designate them. There are the following names given to different portions of this range in Los Angeles County: Santa Monica Mountains, Verdugo Mountains, Caluenga Mountains, Tujunga Mountains, San Fernando Mountains, Sierra Madre Mountains, San Bernardino Mountains, San Gabriel Mountains, San José Mountains, Cucamonga Mountains, and Santa Ana Mountains. The highest mountain in this county is Mount Wilson, about six thousand feet high.

The various fruits grown in Los Angeles County may be found in the markets during the following portions of the year:

Oranges.....	All the year.
Lemons.....	All the year.

Limes.....	All the year.
Figs.....	July to Christmas.
Almonds.....	October.
Apples.....	July to November.
Pears.....	July to November.
Grapes.....	July 15th to December.
Raisins.....	October 20th (new).
Peaches.....	June 15th to Christmas.
Apricots.....	June 15th to September.
Plums and prunes.....	June 1st to November.
Cherries.....	June.
Japanese persimmons.....	November.
Guavas.....	Nearly all the year.
Loquats.....	May 15th to June 15th.
Strawberries.....	Nearly all the year round.
Raspberries.....	June 15th to January.
Blackberries.....	June 15th to September.
Currants.....	May 15th to June 15th.
Gooseberries.....	June.
Watermelons.....	July to October.
Muskmelons.....	July to October.
Mulberries.....	July to December.
Nectarines.....	August.
Olives.....	December to January.
Pomegranates.....	September to December.
Quinces.....	October to December.

In the most northerly part of the county—that is, north of the San Fernando Mountains—is a large body of land known as Soledad Township. This township includes 1,200,000 acres, or one third of the whole county. Because of its position it has a climate quite different from the portion of the county lying south of them.

The average altitude is 2,500 feet. Newhall, thirty miles from Los Angeles, the principal town, the lowest point, has an elevation of 1,265 feet. The winters are cooler than in the southern part of the county, and the summers are somewhat warmer. While this region is not so generally known as the southern part, yet it is very

healthful, and should be particularly sought by persons suffering from lung diseases. The atmosphere is so dry that vast quantities of fruit are brought here by rail to sun-dry. At Newhall fruit-drying is extensively carried on during the summer. This feature of the atmosphere has led raisin-grape growers to look toward Soledad Township with hopeful eyes. Grapes are successfully raised throughout this section, and there is little doubt but that it will ultimately become a raisin-grape producing county. Ten acres of raisin grapes will yield a larger profit per year than sixty acres of wheat. With this as a basis, it is easy to calculate the population that Soledad Township may in time contain.

In the vicinity of Newhall, and particularly at Ravenna, a few miles from Newhall, asthmatics almost invariably derive great benefit. In fact, the residents in this sparsely-settled territory are many of them asthmatics, living there because it is the only place they can live and be free from their tormentor.

There are fair hotel accommodations at Newhall, and comfortable quarters for a limited number at Ravenna. In the western part of this township is Elizabeth Lake, a body of water covering about six hundred acres. There are also in this vicinity five smaller lakes, their elevation being about 3,700 feet. They are surrounded by a fertile, interesting country.

The northeastern part of this township comprises what is known as the Mojave Desert. The soil of this desert is highly nutritious, and it is a desert only because of the lack of moisture. Water is now being conveyed upon this land, and in a few years it will be a desert no longer.

Antelope Valley is a large tract of land in this township, traversed by the Southern Pacific Railroad. This valley is being rapidly occupied by settlers. Artesian wells have been sunk, and deciduous fruit, berries, and all the

cereals are profitably grown. To the farmer who is poor in pocket but rich in energy this section presents many opportunities.

Settlement has been rapid during the past few years, and many fruit trees are being planted, almonds, cherries, and raisin grapes doing especially well. There is a wide artesian belt, and irrigation is being introduced. Some snow occasionally falls in winter, but does no damage to fruit trees. Lancaster is the chief settlement and is a thrifty little town.

The vicinity of Elizabeth Lake abounds in ducks, deer, rabbits, and quail, while on the so-called desert lands antelope are numerous, and the mountains are the haunts of the grizzly bear and mountain lion.

The Santa Clara River, the principal stream of Ventura County, rises in this township in Soledad Cañon.

The most important railway stations are Newhall, Saugus, Lang, South Side, Acton, Alpine, Lancaster, and Rosamond. There are very productive petroleum wells in the neighborhood of Newhall. Placer gold mining is quite profitable in parts of this township, and there are also undeveloped mines of silver, copper, coal, iron, and graphite. Marble and granite are abundant.

This vast township is a *terra incognita* to the average citizen of Los Angeles County, and especially so to the ordinary tourist and health seeker, yet see what a list of interesting features it presents! To the student of Nature who loves mountains, forests, lakes, and plains; who delights in geology, botany, or zoölogy; who desires fossils, shells, rare flowers, and ferns; to the sportsman, the miner, the farmer, or to the fruit grower, there are in this hitherto almost unnoticed territory points of great interest and value. More especially is this section to be commended to the health seeker. Here, at an altitude of 2,500 feet, many invalids who suffer from pulmonary trou-

bles, and fail to find relief nearer the ocean, are greatly benefited.

There are also in this township a number of mineral springs, the most noted being the iron sulphur springs at Lang Station, forty-three miles from Los Angeles, and at an elevation of 1,681 feet. These springs have quite a local reputation for curing rheumatism.

San Fernando Township.

San Fernando Township is just south of Soledad, from which it is separated by the San Fernando Mountains. The Southern Pacific Railroad, in going from the town of San Fernando in this township to the town of Newhall in Soledad Township, passes through a tunnel one and one third mile long, with two exceptions the longest on the Western Continent. This township was formerly a ranch of nearly 125,000 acres, and belonged to General Andres Pico, who made the treaty with General Fremont at Cahuenga in 1847. General Pico sold the ranch in 1846 to Eulogio F. de Celis for \$14,000, and in 1853 he repurchased one half of it for \$15,000.

This ranch has ever since been one immense wheat field, and although subdivided and belonging in tracts of a few thousand acres, to a number of owners, yet it has still remained almost exclusively a wheat-producing territory, a twenty-thousand-acre wheat field being no rare sight.

These tracts are now being subdivided into farms of from five acres to one hundred and sixty acres, and, as a consequence, the products are becoming much more diversified. The subdivision of the large ranchos into small farms has hitherto insured a thorough and economical cultivation of the land, and this, more than any one other cause, has operated to make Southern California the most prosperous and progressive section of the United States.

Near San Fernando is one of the finest orchards of citrus and deciduous fruits in the State, covering over four hundred acres.

In about the center of this township is the Mission of San Fernando Rey, founded in 1797 at the joint expense of Charles IV of Spain and the Marquis of Branceforte, Viceroy of Mexico, in honor of Ferdinand V, King of Castile and Aragon.

The old church is now a complete but an interesting ruin. Formerly the mission buildings aggregated over a mile and a half in length. Many of them have been leveled, but some are yet in an excellent state of preservation.

Mrs. Helen Hunt Jackson, speaking of this town, said: "San Fernando is one of the places I desire to see twice." There are around this mission some fine old olive trees, of which a correspondent of the New York Times wrote as follows:

"Some twenty years ago I visited the San Fernando Mission, twenty-four miles from Los Angeles, in company with Generals Jefferson C. Davis and Stoneman, and we sat long, one delicious evening in December, under the olive trees at that place, smoking cigarettes rolled by Stoneman, chatting about the war, and getting slightly boozed upon aguardiente furnished by General Andres Pico, who commanded the Mexican forces which had defeated the Americans some twenty years before, only a few miles from where we were sitting and inhaling the perfumed air. I visited the same old trees in January last, which still stand up against the storms of one hundred years, for all around the ancient inclosure, built by the Franciscan Fathers a century ago, stand the olive trees which they planted with reverent hands before the Constitution of the United States was adopted. Like that Constitution they have borne fruit for the good of mankind. These old trees of the San Fernando Mission, owing to a legal contest of title about the land on which they stood, were neglected for about ten years and left unpruned, while the land was left untilled. Still the grand old trees maintained their living with but

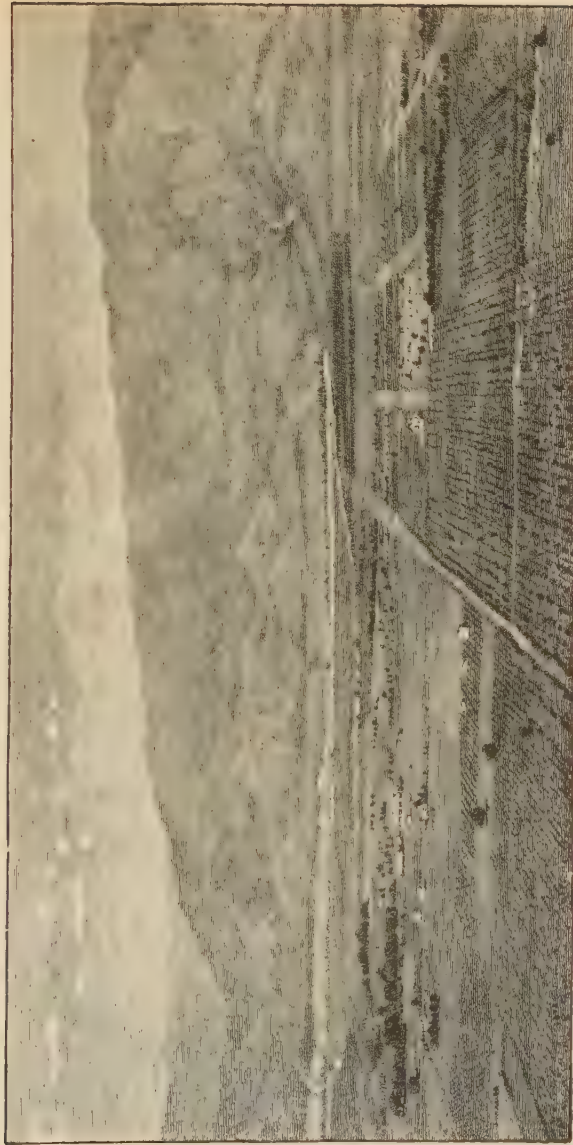
limited fruitings. About three years ago, after the title had been settled, P. Casanave took charge of the grounds and plowed them thoroughly. He then pruned the trees judiciously and awaited results. These have been most gratifying and surprising. Without delay these centenarians commenced sending out hundreds of thousands of new branches and loaded both young and old with precious fruit, while all around the heavy crop of barley thrives, and the trees, though they have received no irrigation, each year produce a glorious crop of handsome olives that make rich returns from thrifty labor. On the bending branches of these ancient trees the fruit, under the sunny sky of San Fernando, will soon be maturing again, and furnish ten thousand gallons of olives for oil or pickles, as may be desired by the owner. Mr. Casanave is now building on the new Fernando colony grounds the largest olive-oil factory in the State, so that he can use up all the olives grown in Los Angeles County."

The town of San Fernando is located on the Southern Pacific Railroad, twenty-one miles from Los Angeles; it has an elevation of one thousand and sixty-one feet. The climate is delightful and the situation beautiful. Between this town and the mountains, one mile away, is a grand, rolling plain, that is now being occupied by cozy homes. Hon. Charles McClay laid out the present town of San Fernando in 1874. In April of that year a free excursion train was run from Los Angeles to attend the first auction sale of town lots. The lots were twenty-five by one hundred feet, and sold at prices ranging from six to twenty dollars.

There are a neat, substantial Methodist Episcopal church, a commodious, attractive public-school building, and a large three-story brick hotel.

Artesian wells and mountain streams water this section. Wheat and barley never need artificial watering, but deciduous and citrus fruits demand some irrigation. San Fernando is forty minutes by rail from Los Angeles, and there are several trains each way daily.

From Burbank, in Los Angeles Township, a short



Monte Vista, twenty miles northwest of Los Angeles (altitude, 1,500 feet).

branch of the Southern Pacific runs to Chatsworth Park, a new settlement pleasantly located among the live oaks.

One of the most prosperous and picturesque mountain resorts in Southern California is Monte Vista, situated in a beautiful, fertile valley between the Verdugo and Sierra Madre Mountains. Monte Vista is twenty miles north of Los Angeles, and four miles east of Monte Vista Station, on the Southern Pacific Railroad.

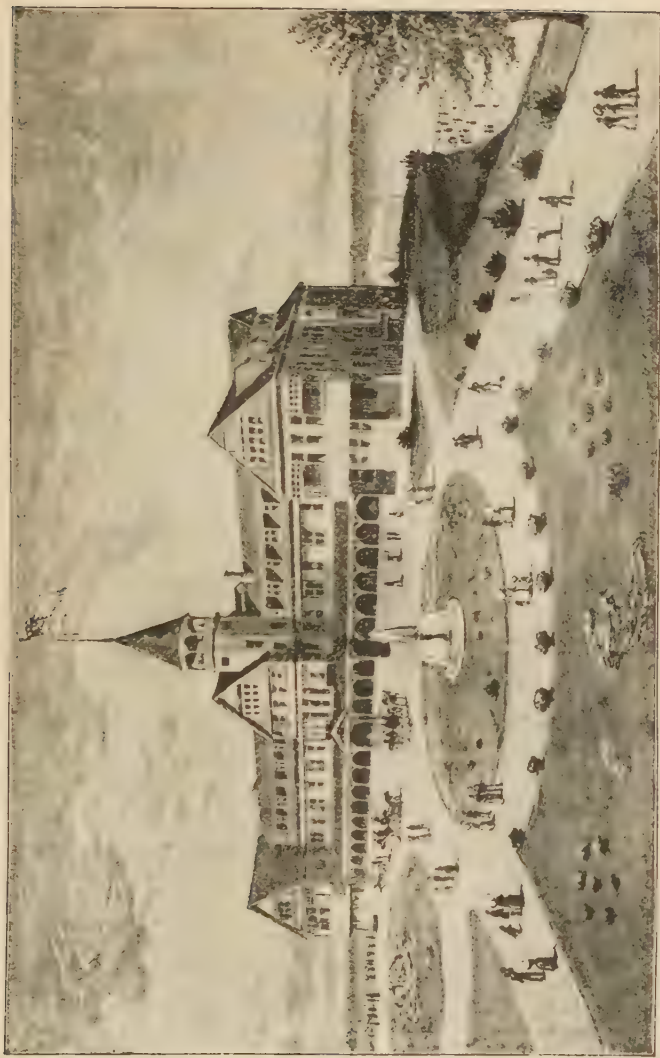
The water supply is pure and abundant. There is quite a body of excellent fruit land in this vicinity, and it is one of the places where the search for health can be happily combined with pleasant out-door employment.

La Ballona Township, Santa Monica.

South of San Fernando Township is La Ballona Township, which contains an area of 114,608 acres, and has forty miles of seacoast. There are many rich grain and fruit farms throughout this township. Some portions are mountainous, but even high on the mountain sides are vineyards and gardens. These mountain or rather foothill vegetable farms were first occupied by very poor people, who were unable to own land in the valley, but, finding that tomatoes could be raised all the year round, their condition of poverty was exchanged for one of comparative wealth.

A grand, romantic place on the northeast boundary of the township is Cahuenga Pass. This pass is eight miles from Los Angeles, and is the spot where, in 1847, the Fremont-Pico treaty was made. Every tourist should take a carriage drive to this point.

All along the mountains, near this pass, are cañons in which are the fruit and vegetable farms referred to. Here also are large fields of watermelons and muskmelons, and during six months in the year large farm-wagons loaded with melons can be seen wending their way to the



Hotel Arcadia, Santa Monica.

Los Angeles markets, whence the melons are shipped by rail in all directions.

This township aligns the city of Los Angeles on the west, and is traversed by two railroads—one, the Southern Pacific, from Los Angeles to Santa Monica and the great iron wharf; the other, the California Southern, from Los Angeles to Santa Monica and Redondo.

The seacoast is of continuous interest to all. Year in and year out the swelling tide rolls in on the long, smooth beach, and each time, as it recedes, leaves behind many treasures of the great deep. Often, as parties of visitors start along the sand dunes, shell and moss gathering, one delightful surprise after another leads them on, until they are astonished to find themselves miles from their starting point. Santa Monica, Santa Monica Cañon, and Ballona are among the most famous resorts on this coast.

Santa Monica is the most popular seaside resort. It is situated on a high bluff on Santa Monica Bay, distant about sixteen miles from Los Angeles.

The comparative mean temperature is as follows: *

Santa Monica, Cal.,	January, 54°;	July, 70°;	Diff., 16°
Jacksonville, Fla.,	January, 55°;	July, 82°;	" 27°
Nice, France,	January, 41°;	July, 73°;	" 33°

The population of Santa Monica is about eighteen hundred, exclusive of the thousands of visitors who resort thither every summer. Trains from Los Angeles arrive and depart about every hour of the day. There are excellent hotels, numerous boarding houses, and a great many cottages that can be rented for the season. Surf-bathing is the popular entertainment. There are several churches and a public school with a number of teachers. During the summer balls are given once or

* Climatic, by E. C. Folsom, M. D. Southern California Practitioner, vol. ii, p. 268.



Eucalyptus Avenue, Inglewood, Los Angeles County.

twice a week. The streets are well graded, there are miles of cement sidewalks, good business blocks, and a street railway. On the beach is a fine pavilion and plunge-bath.

Old Santa Monica Cañon is a charming spot, about two miles from Santa Monica, and is well worth a day's picnicking. Around a luncheon spread under the protecting shadow of an immense sycamore, beside the clear

waters of a mountain stream rushing heedlessly on to its own ingulfment, with great fern and moss-covered cliffs on each side, a merry pleasure party, whose notes of song and laughter are in harmony with the music of the suri, may be found in this cañon almost every day in the year.

Here the Southern Pacific Railway Company has constructed a mammoth wharf nearly a mile long, where a large shipping business is done.

Three miles northeast of Santa Monica is the National Soldiers' Home, with extensive grounds and buildings that give it the appearance of a village. It is an interesting place to visit, containing seventeen hundred veterans.

Inglewood is delightfully situated on the Los Angeles and Ballona branch of the California Central Railroad. It is eight miles from Los Angeles and six from the ocean. The soil in this vicinity is a deep garden loam, and all kinds of fruit usually cultivated in Southern California thrive here. An idea of the climate may be gained from the fact that for the past three years there has been no frost that has damaged growing fruit and vines. Lands around Inglewood are successfully irrigated from the Los Angeles outfall sewer, thus carrying out the theory advanced by Victor Hugo in *Les Misérables* that the sewage of cities should be utilized on the farms and gardens.

Between Los Angeles and Santa Monica, on the Southern Pacific line, is a beautiful and flourishing little settlement known as The Palms.

Los Angeles Township.

South of Soledad, and east of San Fernando Township, is Los Angeles Township, which has an aggregate area of about ninety thousand acres. It is a very rich and productive township, and has many wealthy fruit growers in its population. Los Angeles city occupies the southern part.

The Southern Pacific Railroad from Los Angeles to

San Francisco crosses the southwestern corner of this township. There are several stations on the road; but *Burbank*, a prosperous place fifteen miles from Los Angeles, is the principal village.

The Los Angeles River, a turbulent stream in the winter, but a beautiful creek in the summer, leaving its cañon in the San Fernando Mountains, flows through this township.

Glendale, a pretty little town, with churches, school-houses, and other evidences of an intellectual population, is about eight miles north of the city of Los Angeles, with which it is connected by the "Terminal" railway. In this village is one of the largest peach orchards in the State, besides numerous orange groves and vineyards. The visitor to Southern California should see Glendale.

Verdugo Cañon is an interesting mountain drive, about six miles from Los Angeles. A day spent leisurely here, gathering ferns and wild flowers, or hunting rabbits and quail, can be made very enjoyable.

Ten miles north of the city of Los Angeles is La Cañada, a great body of mountain land, that is extremely fertile, and has been divided into small fruit farms. La Cañada has an elevation of about two thousand feet, and is a very desirable location for consumptives.

The true plan for the person who has incipient consumption is to secure a small tract of land, build a neat little cottage, and make a home for himself where he can stay contentedly until he has regained his health.

The Tujunga Creek has its source in the northern part of this township, and flows into the Los Angeles River.

Wilmington Township, San Pedro.

South of San Antonio is Wilmington Township, a great part of which is a peninsula. There are artesian wells scattered all over Los Angeles County, from Sole-

dad Township to the southern boundary; but the northern part of this township, in the vicinity of *Compton*, is most noted for these perpetual fountains.

As a consequence, this land is remarkably well watered. In early days the dairymen were careless about caring for the surplus water, and the result was, stagnant water and malaria. A philanthropic gentleman, with the true Christian spirit, visited Compton, and, on seeing the stagnant water, said to the only physician in the village, "Doctor, why don't you get the farmers together here, organize a public health association, and drain this water off the land?" The medical man happened to be an Irishman who enjoyed startling people, and his answer was: "Do you think I am a d——d fool? What use would the people have for my quinine and blue mass then?"

Compton was laid out in 1869, and named for G. D. Compton, then the only resident. It is a prosperous town, with churches, schoolhouses, stores, about all the secret societies, and the other institutions of a California village. It is ten miles south of Los Angeles, on the Wilmington branch of the Southern Pacific Railroad. The distinctive industry is butter- and cheese-making. Corn and barley are profitable crops, but the most profitable crop to raise for stock is alfalfa. This is a variety of clover that is raised in every county in Southern California.

Deciduous fruits and berries are also raised successfully here, but citrus fruits are not profitable. A visit to this section will interest all who enjoy seeing fine hogs, cattle, artesian wells, creameries, and cheese factories.

On the coast is the town of *Wilmington*, twenty-two miles from Los Angeles, with which it is connected by the Southern Pacific Railroad. This town was founded by the late General Phineas Banning in 1858, whose name is intimately associated with the development of Los Angeles County.

Like Compton, it has its schools, churches, etc. Three miles beyond Wilmington is *San Pedro*, the location of wharves, custom officials, and the point where vessels with freight and passengers for Los Angeles unload. A full description of San Pedro Harbor will be given in the chapter on "Harbors." While it is not the most popular seaside resort, yet many families go there from Los Angeles every summer, and all who spend a few weeks there are delighted. There are as yet no satisfactory hotel accommodations, and the only pleasant way to do is to rent a cottage.

Concerning the boating and fishing, General D. B. Henderson, member of Congress from Dubuque, Iowa, says, "San Pedro beats the world as a fishing place." Boats can always be rented at reasonable figures.

San Pedro is the terminus of the Wilmington branch of the Southern Pacific Railroad. It also contains one of the largest lumber yards in the world.

Opposite San Pedro is Terminal Island, a peninsula where the Terminal Railway Company has erected large wharves. A pavilion and bath house have also been built. There is fine fishing, boating, and bathing.

One mile farther out on the peninsula is Point Firmin, on which is situated the lighthouse. Courteous keepers are always in charge, and an hour can be pleasantly spent here.

Redondo is a new place, created during the past few years by the energy of two private citizens, who built a magnificent tourist hotel, a wharf, railroad to Los Angeles, bath house, pavilion, etc. Redondo now does a large shipping business, steamers of the coast line calling regularly, and much lumber being imported by sailing vessels. The steamship company handled over fifty million pounds of freight last year. In addition to a large regular population, the town is crowded with visitors on Sundays and holidays, and many families rent cottages for the summer.

There is a fine pebble beach and good fishing. Redondo is reached by the Santa Fé line, as well as by the Redondo narrow-guage railway.

San Antonio Township.

East of La Ballona and the southern part of Los Angeles Township is San Antonio Township. It is a rich body of land. With an area of about thirty-five thousand acres, much of the township is given to the cultivation of wheat, barley, and beets, but there are also many fruit farms. In the eastern part of this township is a single barley field containing eleven thousand acres. It is the Laguna Ranch, and is owned by the estate of Colonel R. S. Baker.

Florence is the only village in this township. It is six miles from Los Angeles, with which it is connected by the Southern Pacific Railroad.

Los Nietos Township, Long Beach, and Santa Fé Springs.

This immense township of nearly a hundred thousand acres lies just east of San Antonio and Wilmington Township. It is naturally the best-watered portion of Los Angeles County. Old San Gabriel River, New San Gabriel River, and Coyote Creek pass through its entire length of twenty-seven miles. Within its borders are numerous large ranches, small farms, and the following towns: Long Beach, Whittier, Downey, Artesia, Fulton Wells, and Norwalk.

Long Beach is a delightful seaside resort twenty-three miles from Los Angeles on the Wilmington branch of the Southern Pacific Railroad. It is also reached by the Terminal Railway. There are several trains daily. Long Beach contains a large Methodist Episcopal church, a Congregational church, good public schools, stores and livery stables, and only one saloon. The Chautauqua Assembly has its annual meeting here every summer.

The term *Long Beach* is not a misnomer, for here is a beach of hard white sand, as level as a floor extending many miles each way. This beach is a perfect natural



Hotel, Long Beach.

(Recently burned, but there are other comfortable hostelryes)

race course, and during the season spanking teams from the city can always be seen dashing over this superb driveway. There is a long pleasure wharf.

Whittier, which was a wild mustard patch five years ago, has grown rapidly. Its location is pleasant and sightly, at the edge of the Los Nietos valley, on the slope of the San José hills, looking toward the ocean. Since the introduction of an ample water supply for irrigation it has made rapid strides. Many lemon groves are being planted, that delicate tree doing well here, where fogs and frost are almost unknown. There are over one hundred acres of orange nurseries. There is a large cannery, which is now employing four hundred and fifty persons and shipping two car-loads of fruit daily, a fruit-drying establishment, a sorghum factory, and a broom factory. The Whittier State school, of five brick and stone buildings, containing about five hundred boys and girls, is located at Whittier. This school was founded with the idea of taking unfortunate boys and girls with criminal environments or tendencies and giving them favorable surroundings, a common-school education, and teaching each one a trade. There are trade schools in carpentry, blacksmithing, printing, house and sign painting, shoe-making, cooking, baking, and tailoring. It is the endeavor to find what each boy or girl is most inclined to and then teach him to be thorough in that avocation. Many of the pupils are also taught vegetable and flower gardening, fruit growing, and general farming. Military training is also a feature of the boys' department. The institution was named for the Quaker poet, who up to the day of his death took a deep interest in the boys and girls in the school so far away from his New England home.

Santa Fé Springs is a neat village, with a Methodist Episcopal church, schoolhouse, etc. This place has become famous on account of its iron sulphur wells. There are a half-dozen wells here that contain water rich in medicinal virtues. They are especially noted for curing rheumatism, dyspepsia, constipation, and kidney and skin dis-

eases. There is no question about the efficacy of these springs, for many remarkable cures bear evidence of their worth.

This town is twelve miles from Los Angeles, and connected with Los Angeles by the San Diego branch of the California Southern Railroad.

Two miles south of Santa Fé Springs is—

Norwalk, an attractive village with the usual quota of churches and schoolhouses. It is seventeen miles from Los Angeles, on the Santa Ana branch of the Southern Pacific Railroad. There are numerous artesian wells, alfalfa fields and cornfields, and a large and prosperous ostrich farm. Thoroughbred stock is profitably and extensively raised. Four miles nearer Los Angeles, on the same line of railroad, is—

Downey, the center of a rich farming and dairy country. One source of great profit in this vicinity is the crop of English walnuts. This crop is said to be more profitable than any fruit or grain. These walnuts sell by the ton at about eight and a half cents per pound, and may be successfully raised in several sections of Southern California; but the people of Los Nietos Township, especially in the vicinity of Downey, Whittier, and Rivera, the headquarters of the industry, have paid the most attention to them. One resident sold his seventeen-acre crop of walnuts for twenty-seven hundred dollars, being one hundred and sixty dollars per acre. Rivera shipped one hundred and thirty car loads of walnuts last year. Downey is settled principally by people from the Southern States, and its citizens are generally noted for contentment and hospitality. This vicinity is rich in water, and is just the place for the farmer. Here, corn is raised in great quantities. A castor-oil mill in the town indicates that castor beans are a profitable crop.

Downey is not a health resort, but it is by no means sickly. The Christians, Baptists, and Methodists have

churches here; there are several secret societies, and excellent public schools.

San Gabriel Township.

This township lies just east of Los Angeles and south of Soledad Township. It has the best reputation of any part of Los Angeles County for citrus fruits and vineyards.

Its elevation varies from eight to twenty-five hundred feet, and from one side to the other it is noted as a resort for consumptives. It contains the city of Pasadena, and the villages of Alhambra, South Pasadena, Lamanda Park, San Gabriel, New San Gabriel, and Sierra Madre—a galaxy of surpassing beauty, with the Sierra Madre Mountains forming a majestic background.

Pasadena—an Indian word meaning “Crown of the Valley”—is now a city with a population of ten thousand. In 1873 it was a sheep pasture, and was purchased by a party of Indiana capitalists for six dollars per acre. For a number of years it was called Indiana Colony. The late D. M. Berry was the manager of this enterprise, and at that time, after a conversation with this sanguine man, people would smile at his ideas of the future of this place.

It did seem too bad to see a man of Mr. Berry's ability wasting his time on such a forlorn hope. He would show that the soil was peculiarly adapted to fruit-growing; that there was an abundance of good water; that it was just the location for a great health resort; that the climate was delightful, both in summer and in winter; that the mountain scenery was magnificent; and that the indigent flowers and ferns were constant sources of pleasure. From these premises he would claim that this beautiful place would soon teem with a great population, but his hearers would shake their heads incredulously and improve on Shakespeare by saying, “Alas, poor Berry! a fellow of infinite jest and most excellent fancy.”

To-day we find Mr. Berry's sheep pasture a city of elegant homes; with ten thousand inhabitants; with numerous street-car lines; many very large and imposing school buildings; a well-selected public library in a building that cost fifty thousand dollars; several banks; with planing mills, fruit canneries, and fruit-crystallizing works that give employment to hundreds of people; numerous secret societies; a very strong and wealthy Young Men's Christian Association; Presbyterian, Congregational, Baptist, Methodist, Episcopal, and Universalist churches. The Throop Polytechnic Institute, located in Pasadena, is the most successful educational institution in Southern California.

Pasadena is eight miles from Los Angeles on the Southern Pacific, California Southern and Terminal Railways. The electric railway also connects Los Angeles and Pasadena, cars leaving Fourth and Spring Streets, Los Angeles, every few minutes. No person can afford to miss visiting Pasadena. The following extract from the Southern California Practitioner, September, 1887, is from the pen of W. M. Chamberlain, M. D., a well-known physician of New York city. Dr. Chamberlain, at the time of writing, had already spent several winters in Pasadena:

"The chain of mountains, extending from southeast to northwest—from Bear Valley to San Fernando Tunnel—is known by the general name of the Sierra Madre. It is the link which connects the Coast Range with the greater range of the Sierra Nevada. It is about seventy miles long. Its peaks—San Antonio (Old Baldy), Cucamonga, San Fernando—are from seven to ten thousand feet high, and the intervening crest-line from four to six thousand feet. It is mainly of granitic rock, often much calcined and usually metamorphic. It is not a simple and single line, but a mass of mountains, having the same general strike or trend. It presents at Pasadena its almost precipitous wall, scantily covered with sage-brush and shrubs. Almost all the day the blazing sunlight rests upon its innumerable ridges, often bare, and the

green ravines which divide them. Winding through and down its many cañons come the streams which feed the life and beauty of the plains below. It rises like a barrier between the arid desert to the eastward and the seaward slope of Los Angeles County. It shuts off the desert winds which, sometimes cold and sometimes fiercely hot, are always dry and withering. It reflects the warmth of the southern and western sun. It arrests and condenses the water-laden clouds, which the trade-winds bring from the warm South Sea; and is the determining cause of the diurnal movement of the land and sea breezes. After sunset the cooled air begins to flow down from the mountains toward the sea; by the middle of the forenoon the heated air rises along the face of the mountains, and the sea-tempered air moves mountainward to fill the vacuum. Rarely does either current become more than a gentle breeze of from four to six miles per hour. After sunrise and after sunset come two or more hours of neutralized currents, when the chimney-smokes go straight upward, and one may carry an unshaded and unshaken flame whither he will. One who will be quiet, may have, from eleven to three, what temperature he may choose. The mercury may stand at 110° on the outward face of the southern piazza and at 78° on the outward face of the northern piazza.

"Between the Sierra Madre and the coast, and, in a general way, parallel to both, is an often-interrupted range of lower hills, called, as they go from the west to the east, the Santa Monica, Cahuenga, Verdugo, Arroyo, and San José Hills; and between them and the Sierra Madre is inclosed the wide and beautiful valley of the San Gabriel River and its upland terrace or bench. Pasadena, which lies in the angle between the Arroyo and the Sierra Madre, is separated from the general San Gabriel Valley by a terrace about one hundred feet high at its western end, which slowly merges into the general plain as it goes eastward.

"Pasadena, with its outlying districts of South Pasadena, Olivewood, Lamanda Park, Sierra Madre, and Monk's Hill, covers about twenty square miles.

"Soil.—The soil is a gray gravel, more or less mixed with brown loam. It is light and porous; the waters go down and come up through it. It is said, on good authority, that there are large springs on the summits of the Sierra Madre. The surface drainage is small but the ground water is near; for in many

places good wells are easily made, and the plains and hillsides here and there are studded with great oaks and sycamores, which go on in perennial growth through dry and wet years; and the groves and avenues of eucalyptus trees show trunks, some a hundred feet high, grown from slips or seed in ten or twelve years. The soil produces freely all kinds of trees and fruits belonging to the subtropical and temperate zones. The apple and the apricot, the cabbage and the cactus, the grape and the guava, the oak and the olive, the pine and the palm, flourish side by side, each almost as well as in its native habitat.

"Water.—The water hardly appears in its natural channels. As it comes down from the mountain ravines it is drawn off, in open ditches and in pipes, and distributed for irrigation and domestic use. One learns the use and beauty of water here in a way and a measure which is seldom known in the East, for here the supply seems insufficient; there is more of it now than there used to be, and it is said to be capable of still further large development by tunneling the hills, and by sinking artesian wells on the plains. The pressure in Pasadena is sufficient to carry it to the top of the buildings on the highest lands which are occupied.

Analysis.

	By Ragsky.— Spradel Spring, Carlsbad, Bo- hemia.*	By Hilgard—Uni- versity California, Sierra Madre water.†
Total of salts in wine-gallon.....	Grains. 361.00	Grains. 18.9
Sulphate and chloride of sodium.....	229.63	9.1
Carbonate of sodium.....	90 00	0.4
Carbonates of { lime..... } { magnesia..... } { silica..... }	27.62	9.4
Sulphate of lime.....	11.00	0.0
Phosphates, fluorides, etc.....	4.75	0.0
Iron, strontium, etc.....		
Total.....	361.00	18.9

* Reference, Handbook of Medical Science.

† Letter from Professor Hilgard.

In its sensible properties it is tasteless, inodorous, clear, lustrous, free from gas, and of natural temperature. Analysis shows it to be a considerably mineralized water, containing enough of the alkaline salts to make it, in common parlance, rather hard. It carries 18.9 grains of solid matter to the wine-gallon, and would seem to be a feeble counterpart to the Carlsbad waters, as will be seen by the accompanying comparison.

" Thus, the principal salts are the same and the ratio of their distribution, and of the total mineralization is, roughly, as 20.1. Chemically, the water seems to be 'deobstruent'—i. e., it is very slightly laxative and diuretic, but not to such a degree as to be noticed by those who are accustomed to it. It does not produce increase of urination in the diabetic, or in the earlier stages of Bright's disease. Organic contamination will be found in it if it is taken from the open ditches or from vegetating reservoirs, but is not found in that which is piped direct from the source. The later condition will soon be general in Pasadena.

" Temperature.—The temperature is less absolutely equable than in the neighboring seacoast towns. As Pasadena is not a station of the United States Signal Service, and Los Angeles is, I take the records of the latter place—distance from Pasadena eight miles:

PLACE.	Elevation.	Rain-days.	Cloudiness.	Humidity.	Rainfall.	TEMPERATURE.							
						Jan. and Feb.	Mar. and April.	May and June.	July and Aug.	Sept. and Oct.	Nov. and Dec.	Mean.	
New York.....	...	122	41	73	43	27	41	62	72	55	34	48	
Aiken, S. C.....	585	132	37	58	51	45	56	72	81	68	48	61	
Jacksonville, Fla.....	37	127	36	68	67	54	63	79	82	72	58	68	
San Antonio, Texas....	676	113	29	67	34	43	66	81	81	61	50	63	
Los Angeles, Cal.....	350	51	28	67	16	54	58	64	65	62	55	59	

St. Paul 57.

New York 45.

Jacksonville 38.

San Antonio 38.

Aiken 36.

Los Angeles 11.

Difference of the means of the two coldest and the two warmest months.

Algiers.... 23

Mentone... 33

" A much more instructive indication is obtained by noting the difference between the mean temperature of the hot and cold months, which is indicated graphically by the black lines, and arithmetically by the figures attached. It thus appears that Los Angeles has fewer rainy days, less rainfall, a much more equable temperature, closely approximating the ideal mean of sixty degrees. In dryness of the air Aiken exceeds it, but it must be remembered that Aiken is ten times as far from the sea as Los Angeles, and considerably higher in level, which is, in fact, not an average point for Southern California.

" Rainfall.—The rainfall varies greatly in different years. The highest recorded is forty-seven inches in 1884; the lowest is five inches in 1876. Eighteen inches is considered a fair supply, and is about the actual average. The rain falls largely at night. It is rare to see more than four rainy days in succession. The season for rain is from November to May, during which period there will be sixteen to eighteen rainy days, in spells of two or three days at a time, and an occasional rainy night between two bright days. It is rare that a whole day is cloudy; but cloudless weeks are common. Fogs are rare; dews are light, and rarely noted except on low lands.

" Clinical Histories.—In earlier days Pasadena was an outlying pasture ground of the San Gabriel Plain, and subject to the administration of the Franciscan Mission of San Gabriel. For nearly twenty years, from 1830 to 1849, the Mexican governors curtailed the authority, fed upon the revenues, and parceled out the lands of the Church.

" When it became apparent that California would soon become part of the United States, Governors Alvarado and Pico made haste to distribute among their retainers and friends all the ungranted lands, and their grants were, for the most part, held valid by the Government of the United States. For the last twenty years these grants have been divided again and again, and have come into the market. Thus, in 1873, about fifteen hundred acres, held under the Garjias and Wilson grants, were sold to a colony of Indiana people. The financial crisis of 1873 practically broke up the organization, but some of its members remained, and from 1873 to 1876 some thirty-five families, containing one hundred and fifty members, settled upon the territory and have remained there. To these have been added, particularly within the last three years,

strangers enough to raise the population to somewhat more than five thousand,* among whom the old-timers are dispersed.

"There are no authentic records, in fact none of any sort, of the vital history of the original settlers; but by conversation with some of their number, and a comparison of their statements, I have derived the following information. From the time and efforts given to verifying its points, I believe it closely approximates actual facts.

"It must be remembered that a portion of these original immigrants came as confirmed invalids, a larger portion on account of their inability or unwillingness to endure the harsher climates in which they had previously lived. Such a community could not be assumed to possess average vitality or expectation of life.

"They were obliged to create their homes on the new and arid soil of an upland plain. Only gradually did comfortable houses replace the tents and shanties and 'adobes' in which for years they were harbored. Such conditions do not seem to offer average protection to infancy and age and feeble life.

"But the record seems to say that there were thirty-five families, comprising, with children brought with them and children born here, one hundred and forty-nine persons.

"Allowing ten years as the average period of residence, and multiplying one hundred and forty-nine by ten, we have fourteen hundred and ninety years of aggregate life. In these families thus aggregated, including old, the diseased, and the infants, there have occurred, in ten years, thirteen deaths; less than one per cent! Most of these were from causes quite independent of local influences. Thus, the causes of death given are, cerebral tumor, one; diabetes, one; apoplexy, one; diseases of the lungs, four; old age, one; heart disease, four; children, four; thirteen in all.

"Several cases, said to be 'diseased lungs,' have issued in permanent recovery. There have been no cases of consumption among children born here, although hereditary predisposition must be presumed for many. There has been no death in these thirty-five families from typhus or typhoid fevers, diphtheria, measles, or whooping-cough. In the whole community, number-

* Written in 1887; population now ten thousand.

ing now nearly five thousand people, I have been able to learn of but four deaths from scarlet fever and one from diphtheria in ten years. Twice in the last ten years there have been local evidences of diarrhoea and dysentery, mild in character and without mortality; also a few cases of typhoid fever, all traceable to local causes—water contamination from open ditches and neglected reservoirs. These causes were promptly removed, with speedy suppression of the disease.

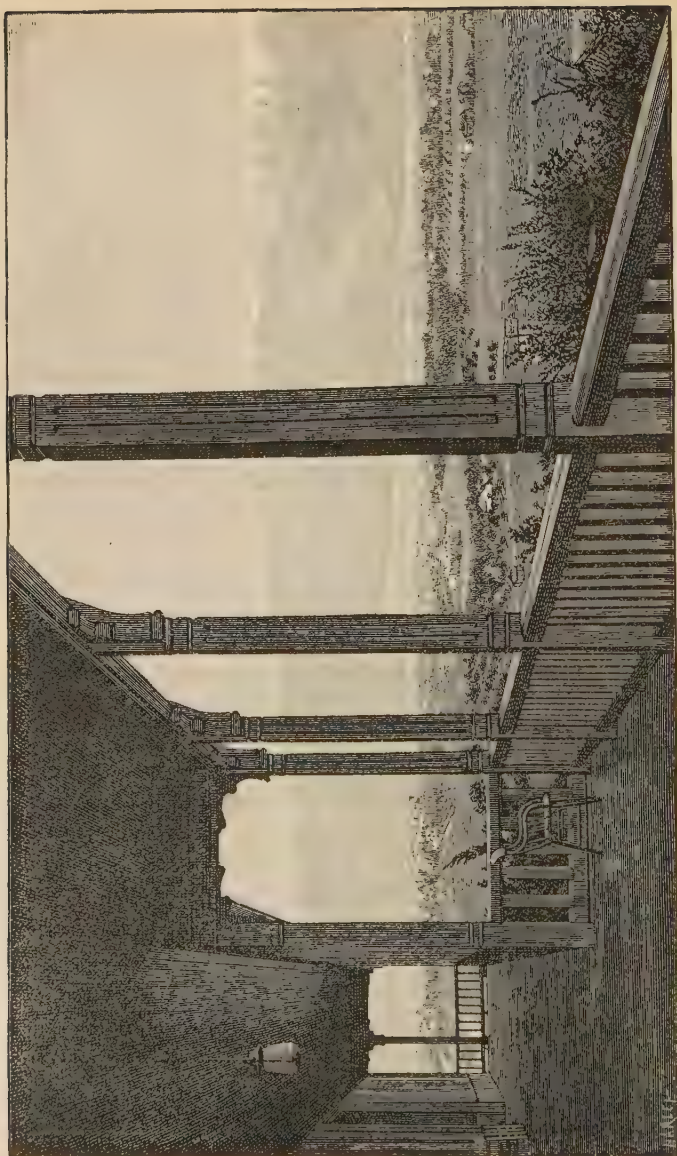
"It has been thought that miasmatic diseases are likely to come in, as the irrigating water is spread over an annually increasing area, and the land is shaded by increasing areas of orchards and groves.

"There are reasons for doubting the truth of this assumption. In one of the oldest orchards lives a family whose eight children have been reared on purely irrigated land. There has never been among them one case of miasmatic disease; though some of them are now adults. A few years since an ague-stricken colony of forty-three persons was brought from the 'bottoms' of the Tombigbee River, in Alabama, and placed on the oldest, lowest, and dampest ranches of the San Gabriel region. For two years ague was rife among them, but the residual effects of their former abode have been eliminated, and now ague is either unknown or very rare among them. A great improvement in their general appearance is noted.

"It would be hard to find anywhere a better-developed and more wholesome-looking body of children than you may see in the public schools of Pasadena.

"Thus we may conclude that the vital record of the place, up to the present time, has been very exceptionally good. Henceforth the population will contain a large number of persons who have been sent thither as a forlorn hope—a last resort—and mortality from chest diseases may be very large. It is with a melancholy and embittered sense that the local medical men recognize that so many are thoughtlessly or cruelly sent only to die among strangers and far from all the resources of home."

In the southern part of Pasadena was the great Raymond Hotel that has entertained thirty-five thousand guests within nine months, the fall, winter, and spring of



View of Sierra Madre Mountains and Pasadena, from Raymond Hotel.

1886—'87. It had a station of its own called Raymond. The hotel was located on a very commanding site, and the illustration on the opposite page gives an idea of the view from its veranda. The hotel was destroyed by fire a few months ago, and now the tourist or health seeker must depend on the Hotel Painter, Hotel Green, or one of the numerous private boarding houses. Two miles nearer Los Angeles than Pasadena is—

South Pasadena, a rapidly-growing town, with numerous beautiful homes, orange groves, etc.

Four miles farther from Los Angeles than Pasadena, on the same railroad, is—

Lamanda Park, a town with stores and other village accessories. This is the nearest station to the Sierra Madre Villa, a noted hotel for tourists. Kinneyloa, the ranch of the Hon. Abbott Kinney, is near this point. It contains one of the largest orange orchards in California. An illustration on page 91 gives a view of the place, with a grove of live-oaks in the foreground.

Coming from Los Angeles, the first village is—

San Gabriel, a delightful old town on the Southern Pacific Railroad. One mile from this town is the noted Sunny Slope Vineyard, sold some years ago to an English company for one million dollars. This tract is now being sold in subdivisions.

Here is the San Gabriel Mission, established by Padre Junipero in 1771. The building is still in good condition, and is a point of universal interest. San Gabriel is nine miles from Los Angeles, and has long been noted for its salubrious climate and aged people. In 1878 Señora Eulalia Perez de Guilen died here, aged one hundred and forty-three years, she having been born in Lower California in 1735.* September 5, 1854, Maria Francisca Villabobas de Zavila died, aged one hundred and twelve

* The age of Señora de Guilen has been established beyond doubt.

years. A mile from San Gabriel is the beautiful village of—

Alhambra.—Here is an elegant hotel, bank, a school-house, several churches, and orchards of almost every variety of fruits—apricots, nectarines, apples, pears, plums, guavas, oranges, lemons, and limes. All reach their greatest possibilities in this vicinity. Near Alhambra is the winery and distilleries of the San Gabriel Wine Company, the largest building of the kind in the world.

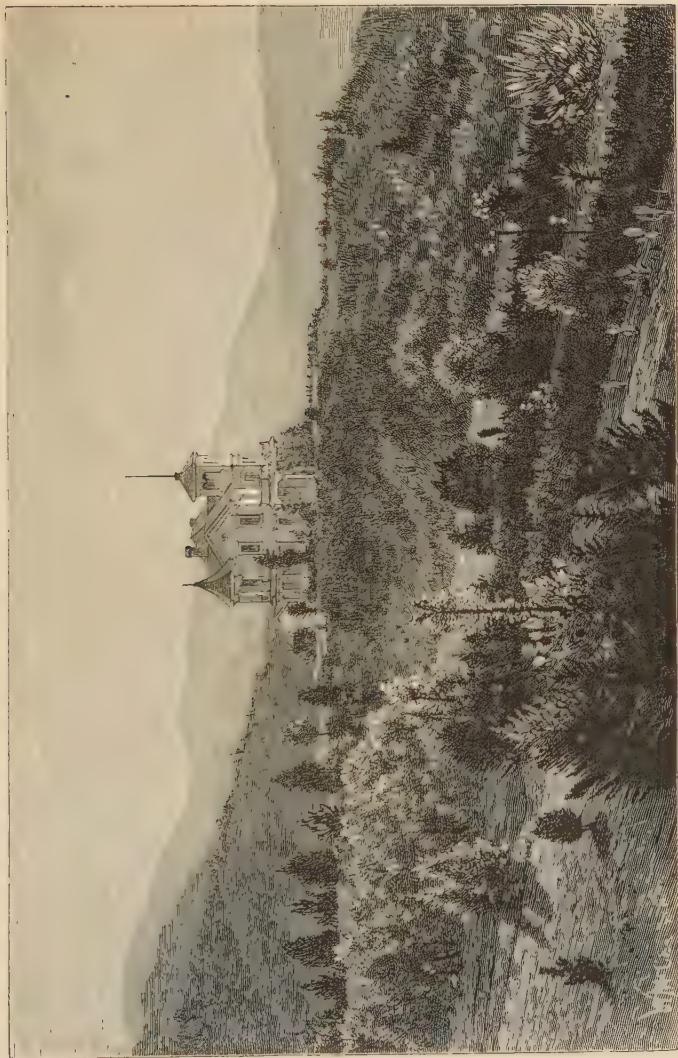
Sierra Madre is the name of a village near the eastern edge of this township. It is not on any railroad, but the nearest station is Santa Anita, on the California Southern, sixteen miles from Los Angeles. Sierra Madre is the residence of a large number of very wealthy, aristocratic, highly-educated families who have elegant mountain villas, some of which are on such a large scale that one is carried back in thought to the castles of Europe. The climate here is very healthful, and all of this foothill region is noted as a resort for invalids.

Here, again, the invalid should remember that the best way to gain health is to get a cottage, live an independent life, avoiding contact with other invalids.

Mount Wilson.—Away up in the mountains back of Pasadena is Mount Wilson. A little to the north is Mount Lowe, where a remarkable cable incline-railway has been built to the summit of Echo Mountain, where there is a comfortable hotel and an astronomical observatory. An electric railway winds along the precipitous mountain slopes four miles farther and higher toward Mount Lowe, the highest peak in the range. This trip should be made by all visitors to Southern California.

El Monte, Azusa, and San José Townships.

These three large townships lie side by side south of Soledad Township, bordered on the west by San Gabriel Township, and on the east by San Bernardino County.



A Sierra Madre Residence.

This one tier of townships, resting here together and forming about one eighteenth part of Los Angeles County, contains almost everything that mortal man could desire or eye could wish to see.

Traversed by railroads, rivers, and mountains; with numerous villas, ornamented with the palm, the heliotrope, and the rose; surrounded by orchards and vineyards of luxuriant growth, and widely diverse products; where almost every home has an altitude of from one to four thousand feet; with few fogs or frosts; with the perpetual view of the valleys dotted with towns, the ocean flecked with white sails, and the purple-tinted mountains of the islands. A two hours' tramp to the north will lead to mountain dells, waterfalls, ferns, and wild flowers, or a half-hour's ride on the cars will leave one in the center of the city of Los Angeles.

The Southern Pacific Railroad traverses the southern portion of these townships, and has in them the following stations: Savanna, El Monte, Puente, Spadra, and Pomona. A branch has recently been constructed to Covina, near Azusa.

Savanna is an unimportant station in a wealthy agricultural region.

El Monte is the center of a territory very much like that of Downey. Here again, like Downey, we find corn, hogs, and cattle predominating, and here again, also, we find, as in the vicinity of Downey, the great bulk of the population has come from the Southern States.

Following the San Gabriel River from Downey to El Monte, this is the chief line of products. Where hogs and corn are leading sources of wealth you can rest assured there is no health resort. This small section around El Monte is totally different from nineteen twentieths of the lands in these townships. The altitudes, as can be seen by the tables, is only two hundred and eighty-six feet, and the land is moist. For the farmer who wishes to raise

hogs, deciduous fruits, and grain, there are great inducements, but the health seeker, or the person who desires to grow citrus fruits or raisin grapes, should avoid this small strip of country.

Puente is fifty feet higher than El Monte, and twenty miles east of Los Angeles. It is the center of the Puente oil district, and is on this account a point of interest. There is here a large hotel. A fuller report of the oil wells can be found in the chapter on Petroleum.

Spadra is a station ten miles east of Puente, situated at an altitude of seven hundred and five feet.

Pomona.—Pomona is three miles farther east. In 1875 a land company, in which L. M. Holt, Milton Thomas, and T. A. Garey, of Los Angeles, were the leading spirits, purchased a great body of rolling land, upon which they laid out a town they named Pomona. On Washington's birthday, 1876, there was an excursion from Los Angeles to the embryo town, to attend an auction sale of lots.

Many went who were not interested in lots, but who spent the day joyfully wandering over the plains, through the rich, green carpet of fern-like alfileria—a wild grass that grows profusely throughout Southern California and furnishes food for all varieties of stock, not only in the winter and spring, when it is green, but also in mid-summer, when, without any harvesting, it becomes sun-cured, and is an answer to the question often asked, "How can stock keep so fat where there is no green grass?"

But on this February day the alfileria had on its delicate bluish-pink blossom, which gave the green carpet a lighter tint, that was here and there again relieved by bright orange rugs, varying in size from a few yards square to acres in breadth. What were these brilliant rugs?

On closer view they proved to be solid beds of brilliant poppies, that at this time of the year reach perfection.



Farmhouse in Vernon.

Such beautiful bouquets as were gathered on that bright February day! Happy was every child with its hands full. There were lavender-colored lilies, bright-red cardinal flowers, pretty crucifers, vast bunches of violets, cream-colored bellflowers, and the delicately-shaded tulip. Too bad to change God's flower garden into a busy, sor-did town!

Twenty Februaries have come and gone since that auction sale, and wonderful changes have come to pass. Here on this plain is now a city of seven thousand inhabitants, with banks, schoolhouses, and churches; and a great Congregational college, making Pomona an intellectual center. There is no available record of the number of thousands of acres of apricots and other fruits around this town. The surrounding country is a great orchard, and Flora has stepped aside to make place for Pomona.

The town of Pomona has an elevation of eight hundred and sixty-seven feet, and in the immediate vicinity can be found any altitude between this and fifteen hundred feet. The citizens have been so busily engaged in their commercial pursuits that they have taken little thought of the advantageous location of their town for a health resort, but it is nevertheless a desirable point for persons with pulmonary troubles.

The air is dry and pure. The daily breeze that comes in from the ocean has, in its journey of fifty miles, lost its moisture, but it still serves the purpose of equalizing the temperature and keeping midsummer cool and midwinter warm. Pomona is blessed with an abundant water supply. There are seventy artesian wells, with an average flow each of two hundred thousand gallons in twenty-four hours, in this vicinity, and a large body of water is brought down from the snow-covered sides of Old Baldy, through a rift in its side called San Antonio Cañon.

There are brickyards, pipe works, wineries, feed mills, mattress factories, fruit canneries, and numerous other

industries. There are several nurseries, one firm having in 1887 sold over thirty thousand orange trees.

Pomona is the center of the olive industry in Southern California. Hundreds of thousands of young trees are sent to all parts of the coast every year.

The Methodists, Episcopalians, Presbyterians, Congregationalists, Baptists, Disciples of Christ, Universalists, Catholics, German Lutherans, and the Band of Holiness, all have churches here. There are lodges of Masons, Odd Fellows, Ancient Order of United Workmen, Knights of Pythias, a post of the Grand Army of the Republic, and a Young Men's Christian Association. There are two newspapers—the Times-Courier and the Progress.

The Santa Anita Ranch.—From two to five miles north of and parallel to the Southern Pacific Railroad is the California Southern Railroad, whose track is laid along the base of the mountains. The line of this road has been the scene of a wonderful growth. Promising, ambitious, wide-awake little towns have sprung up as if by magic.

The traveler will, after half an hour's ride on this road, have passed by the site of the Raymond Hotel, through the city of Pasadena, and reached Santa Anita, the first station in El Monte Township. This is the nearest station to the village of Sierra Madre, and it is also the nearest to the celebrated Santa Anita Ranch, the home of E. J. Baldwin, better known as "Lucky" Baldwin. Here, at Mr. Baldwin's home, fourteen miles from Los Angeles, are many acres of orange groves, hundreds of acres of vineyard, beautiful lawns, an artificial lake and fountains, and a stable of probably the most noted horses in the United States.

Here are to be seen a large number of fleet racers which have made a wide reputation on the American turf. This is the place where the noted wines and brandies that bear the Baldwin brand are made.



Santa Anita Ranch.

Mr. Baldwin farms on a very extensive scale, and produces almost everything in the way of grain, fruit, and stock. He has in this vicinity the following ranches:

Santa Anita Ranch.....	10,000	"
La Puente Ranch.....	19,000	"
San Francisquito Ranch.....	6,000	"
Felipe Lugo Ranch.....	3,000	"
Portero Grande	5,000	"
Merced.....	3,000	"
Portero Chico.....	100	"

A total of..... 46,100 acres here, while west of Los Angeles is the Cienega Ranch of four thousand acres, carried on as a model dairy. Mr. Baldwin has a great deal of the best business property in the city of Los Angeles, and four thousand acres of land in other parts of Los Angeles County. Much of his property is now being subdivided and sold in small farms to actual settlers.

Every visitor to Los Angeles should take what is known as the *Grand Round*, which is a day's drive from Los Angeles. This trip includes the following places: The Raymond Hotel site, from which there is a good view of mountains, valleys, and ocean; Pasadena; the Sierra Madre Villa, where a lunch will be relished; Mr. Baldwin's Santa Anita Ranch; Sunny-Slope winery and distillery; San Gabriel Mission, where the visitor is welcome to enter; and then, past the winery of the San Gabriel Wine Company, to Los Angeles. The tourist should have a driver or a guide, and he should see that the driver takes him to these places in the order in which they are here noted.

Two miles east of Santa Anita is *Arcadia*—an embryo town in a beautiful location that was laid out during the boom of 1887—that has recently been plotted and sold by

Mr. Unruh. It is in the center of Mr. Baldwin's possessions.

Monrovia is two miles east of Arcadia, and is the wonder of this coast.

Its history reads like a romance. Its founder, W. N. Monroe, a man whom it is a pleasure to know, bought a large tract of land in 1885 of Mr. E. J. Baldwin. Realizing the advantages of the location, he decided to found a town here, and in May, 1886, the town site was laid out in lots. Now we find a beautiful prosperous town, with several churches, a schoolhouse that cost fifteen thousand dollars, a line of street cars, large hotels under excellent management, a bank, large business blocks in which merchants are doing a thriving business, and beautiful homes surrounded by semi-tropical plants and productive orchards. *Monrovia* is specially favored in the matter of water supply, water being deeded with every tract and town lot.

Monrovia is especially commended as a health resort. It is nineteen miles from Los Angeles, and lies close to the base of the Sierra Madre Mountains. It has an elevation of about twelve hundred feet, but here, as elsewhere, the victim of lung disease will do best if he has his own cottage, flower garden, and carriage, so that he may lead a life independent of hotels, and completely separated from other invalids. There are at least a dozen trains daily between *Monrovia* and Los Angeles, on the Southern California and Southern Pacific lines.

Mr. C. F. Holder, the well-known writer, in a letter to the *Los Angeles Times*, says:

"*Monrovia* has been fortunate in the fact that a large number of wealthy men have settled in the place, and are doing their utmost to render it a beautiful resort. Among these are W. N. Monroe, the founder of the town, whose fine residence is a sample of what can be done in a year or so. It looks like a place half a century old, yet the jack

rabbit held possession not long ago. Great groups of bananas wave their graceful leaves, roses, pampas grass, and a wealth of flowers and fruit tend to make this place a model Southern California home. One of the main avenues is about a mile long, and planted on both sides closely with these graceful trees, which, owing to the mildness of the climate here, bear well."

It is said that a Texan selected a home in Monrovia, and told Mr. Monroe he would be back in an hour with the money. When he returned, another man had bought the place and paid for it. The next day the Texan came back, and asked the Mayor what he would take for another property he had chosen. As soon as a price was agreed upon, the Texan whipped out a six-shooter, and, leveling it on Mr. Monroe, ordered him not to exchange words with another person until the papers were signed and transferred.

This anecdote slightly exaggerates the great desire of people to get homes in this vicinity. J. I. Case (owner of "J. I. C."), of Wisconsin, the Messrs. Studebaker, of South Bend, Indiana, and many other wealthy people have beautiful winter homes here.

" Monrovia sits like a beautiful queen,
With scepter of flowers in a kingdom of green;
Her orange groves bring her their tribute of gold,
While gardens and vineyards rich treasures unfold.

" Her sweet, balmy breath gives the feeble new life,
Her bright, sunny smile woos them on to new strife;
She charms and refreshes with pure, gushing fountains,
That come with their coolness from snowy-capped mountains."

San Antonio Cañon.

Duarte, Azusa, Glendora, La Verne, San Dimas, Lordsburg, North Pomona, and Claremont are all prosperous towns along the California Central Railroad. They



A Monrovia Residence.

are all in the midst of good land for citrus and deciduous fruits, and are all good localities for the average case of incipient phthisis. The mountains just back of all these places are sources of never-ending interest. Near Sierra Madre are gold mines. These numerous cañons, leading up to mountain peaks along this ridge, and any of these towns along the California Central, are good places to start from for a mountain climb after ferns, flowers, or game.

The most noted of these is San Antonio Cañon, and the following extracts, from a description in the *Overland* for August, 1887, of *Our Camp in the Cañon*, by Belle J. Bidwell, graphically tells how the writer and another lady, who is called "the Invalid," spent ten weeks camping here, four thousand feet above the level of the sea:

" . . . This cañon of San Antonio is a great cleft in the Sierra Madre Range. We are told that seventeen years ago it was 'as pretty a cañon as you'd find anywhere. A man could gallop his horse clear up to the sawmill.' Some mighty storm, perhaps a cloud-burst, in the mountains, aided in its work of destruction by the felling of trees for the mill, has swept down the cañon, carrying in its flood rocks and trees from the mountain-sides, making for itself a path, and leaving huge boulders and immense tree trunks in its course.

"The sawmill is in ruins now—whether picturesque or not we did not learn, for it is nearly at the head of the cañon, too far away for a visit. The river is now but a small creek, probably from fifteen to twenty feet wide most of the way. It winds its way here and there, and has to be forded nine times by all travelers coming up the cañon with teams. It is by no means a quiet stream; its voice is loud enough to drown human voices near its banks, and, when one wakes in the night, the roar seems like that of a storm of wind and rain. Great alders, willows, and live-oaks grow beside it, apparently fighting for a foothold in the rocks, and liable at any time during the winter rains to be torn from their places and laid prostrate across the water.

"We kept a 'thermometer report' for a local paper, having our thermometer hung above the table in a convenient place for taking observations at meal-times. Ninety-two degrees was the highest temperature we had at noon, and forty-seven was the lowest at seven o'clock in the morning. These figures were exceptional, the usual range being from sixty to eighty. The coolest mornings we sat by a camp fire until the sunshine reached our camp, when fire was no longer necessary. On the warmest days our favorite seats were the shadiest rocks very near the water. Four thousand feet above the ocean we thought the fogs that cover the valleys so much of the time would not reach us; but one morning at six o'clock the housekeeper came into the tent singing, 'When the mists have cleared away,' and we looked out upon a dense gray wall shutting us in on every side from even the nearest hills. Three hours later nothing remained of it but a few curling cloud wreaths on the mountain peaks. Several times the early risers looking down the cañon saw the fog bank coming up, but only once more did it reach us during the ten weeks and a half of our stay. It was the rainy season over to the east of us in Arizona, and sometimes our beautiful blue sky was made more beautiful by gray or white banks of cloud that rose above the mountains and floated over the cañon, falling once in showers that astonished us, for the oldest inhabitant 'never saw rain at this time of the year.' . . .

"There are sycamores all through the cañon, growing most abundantly in the ravines or little side cañons where the brooks come down to join the larger stream. Their white trunks, twisted in fantastic forms, and the weird mistletoe drooping from the boughs in great bunches, make them the strangest-looking trees in the cañon. The mistletoe seems to prefer the sycamore, though it grows sometimes in the alders. Probably the live-oak, with its glossy, dark-green foliage and graceful shapes, is the prettiest tree. The California bay, or laurel, which may be called a tree from its size, though usually growing in bushy form, is beautiful in color, and is a favorite because of its fragrance. The children gathered wild cherries from a shrub that bears shining, prickly leaves; but the fruit, of about the size and color of some cultivated cherries, is mostly stone and skin. The low growth of shrubs that covers the gentler slopes of the mountains—the chaparral—is made up of the grease wood, mountain mahogany,

buckthorn, cherry, manzanita, herba santa, or 'mountain balm,' from which a medicine is prepared for pulmonary affections, and a few others, the names of which we did not learn."

ORANGE COUNTY.

The county of Orange was segregated from Los Angeles in 1889. It is a small county, containing only six hundred and seventy-one square miles.

Anaheim Township—Westminster, Santa Ana, and San Juan Townships.

Like an L from an old-fashioned house, these four townships extend southeast from the main body of the county. Santa Ana and San Juan Townships are bounded on the north by San Bernardino County. San Juan Township is bounded on the southeast by San Diego County.

There is in these four townships a wonderful diversity of products. An immense cornfield and a beautiful orange grove can frequently be found within a stone's throw of each other, while the apple and the pear, the lemon and the lime, the raisin grape and the wine grape, beets and pumpkins, barley and wheat, cattle and sheep, honey and butter, horses and poultry, pomegranates and figs, all unite to swell the income of the land-owner.

The centers of population in these townships are Anaheim, Westminster, Orange, Tustin, Santa Ana, and San Juan-by-the-Sea.

Anaheim.—Anaheim is the oldest of these towns, and is known as the "Mother Colony." The following interesting description of the founding of this town is by Major B. C. Truman, and was first published in the New York Times:

"One of the most interesting places in Southern California, or in fact in the world, that I have visited is Anaheim, about

twenty-eight miles from the city of Los Angeles. Wine-making has been, is, and always will be, the leading industry of Anaheim. The light soil has been proved, by nearly thirty years of experience, to be well adapted for the successful growth of the vine. Although Mr. Wetmore, who is very good authority generally, believes that the *berger* will not do well in Anaheim, it is well known that the *Mission*, *Zinfandel*, *Black Malvoisie*, *Mataro*, *Trousseau*, and *Golden Chasselas*, are as successful there as in any portion of the State.

"It was for the pursuit of this industry that Anaheim was first organized about thirty years ago, and I believe its establishment as a colony was one of the first subdivisions of large tracts of land and improvements by water systems in the State. It was projected in 1857 by a party of wealthy Germans of San Francisco, who conceived the happy idea of converting some portion of Los Angeles County into a collection of homes and vineyards for a certain number of the industrious and deserving of their race, and at once formed themselves into an acting body with the title of the Los Angeles County Vineyard Association. After mature deliberation, the association resolved to employ a competent and proper person to select a site and make necessary arrangements for the purchase of a thousand acres of land somewhere between the city of Los Angeles and the sea, with a view to water, soil, and climate. The surveyor of the county was selected as superintendent, and was at once instructed regarding the general order of the original plan of the projectors, and empowered with authority and furnished with funds to erect a vineyard or a collection of vineyards, the details of the erection of said vineyards to be entirely according to his own taste, inasmuch as they should not fail to correspond, on the whole, with the plan proposed and agreed upon by the association. The site selected was a part of the Rancho San Juan Cajon de Santa Ana. The superintendent engaged himself at the work he had proposed to perform, and purchased eleven hundred acres of land from Don Juan Pacifico Ondiveras, and divided it into fifty lots of twenty acres each, reserving a portion in the center for streets and public buildings. Before the end of the year the plat had assumed a tangible shape. The entire site was fenced with willows, the boundaries of the twenty-acre lots were made and fenced, ditches were constructed, and four hundred acres of vines were planted

before the expiration of the second year. Eight acres in each lot had been successfully planted with grapes, leaving the balance (twelve acres) for agricultural purposes, pasture, etc. Toward the close of 1859 the superintendent had successfully carried out the plan of the association at an expense of seventy thousand dollars. The final action then took place on the part of the society, which was to settle some German person upon each of the vineyards on the payment of fourteen hundred dollars, just one fiftieth of the aggregate cost of the whole, the selection of each vineyard to be made by drawing lots, each person to receive in addition to his vineyard a town lot, leaving fourteen for public purposes. Two thirds of the entire plat were at once taken up, and gradually the whole number was converted into many little German homes, containing a happy and thriving community."

Anaheim, during these thirty-eight years, has continued to be pre-eminently a vine-growing and wine-manufacturing town, although of late many orchards of walnuts and other trees have been planted. Several thousand acres are cultivated in sugar beets, which yield a heavy percentage of sugar. They are at present sold to the Chino factory, but bonds have been issued for a factory at Anaheim. There are now a number of wineries in Anaheim and its immediate vicinity. The business of wine-making has always been in the hands of the German colonists, and they have made money steadily almost from the beginning. Many have grown rich. It is no credit to a man to say that he has made a fortune through speculation in real estate. It simply means that he has gambled on the fluctuations in property and won, but when it can be said that a community has grown rich from the products of the land, then eulogies may be justly pronounced on both people and soil.

The residents of Anaheim have continued year after year constant in their work, and wholly unmindful of the boom and speculating fever of outside places.

Their homes were made comfortable, flowers were kept beautiful in their gardens, and the pepper tree, the

sycamore, and the acacia shaded their sidewalks, but there has not been the spirit of what is known as public improvement.

When the Southern Pacific Company wanted to give them the boon of a railroad, and asked for right of way and ground for a station in the center of the town, they answered: "No; we do not want our vineyards cut in two by a railroad."

"It will double the value of your property."

"Will it double the number of tons of grapes our vineyards will produce? We do not want to sell our vineyards, consequently the increased valuation simply means increased taxation and not increased production." The railroad skirted around the town, the station was located outside of the town limits, and the German was happy.

Such has been the happy, quiet, prosperous life of the Anaheimer, but lately his equanimity has been seriously disturbed by the advent of another railroad. The California Southern now startles the Anaheim chicken from its roost.

The Yankee has stepped into the arena, and Anaheim, in spite of its original industrious citizens, bids fair to become a city. It is twenty-eight miles from Los Angeles, with which it is connected by the Southern Pacific and California Southern Railroads. It now has a population of thirty-five hundred, and is growing rapidly.

Two miles from Anaheim is the flourishing town of *Fullerton*, named for Mr. George H. Fullerton, a Los Angeles capitalist. Fullerton is on the California Southern Railroad, and in the midst of a rich territory. It contains the usual complement of hotels, churches, schoolhouses, and stores, besides a cannery, packing houses, etc. Large quantities of vegetables, fruits, and wool are shipped.

Westminster is eight miles southwest of Anaheim, toward the ocean. It was started as a Presbyterian town, and the following sketch, from the Anaheim Gazette

Pamphlet of 1879, gives an excellent general idea of the place:

"Westminster was started as a colony enterprise, by the Rev. L. P. Webber, in the fall of 1871. He selected a tract of level land between Anaheim and the ocean, comprising about eight thousand acres, afterward enlarged to ten thousand acres, and endeavored to call together persons who would heartily co-operate in church, school, and social affairs, so as to get all the advantages of an old settlement from the beginning. After his death, in 1874, his work was continued, and the present status of the place is as follows:

"The original tract and addition is all sold and occupied in farms, mostly of forty acres each. The adjacent country has all been occupied, and a Westminster Township organized with a population estimated at about two thousand. There are four school districts—viz., Westminster, Las Bolsas, Garden Grove, and Alamitos. In the village are three neat church buildings, all complete and free from debt, which testify to the character of the people. They belong, respectively, to the Presbyterian, Methodist, and Congregational churches. Their spires can be seen from a long distance on the plain. In the village are also three stores of general merchandise, two smithies, one wagon shop, one harness shop, tin shop, milliner, shoemaker, etc.

"About two hundred and fifty artesian wells supply abundance of pure, cool water for all purposes, including irrigation, and their number can be indefinitely increased. Probably no other section of the United States has so many flowing wells. This constitutes the distinctive feature of this section.

"Barley averages about twenty cents to the acre; corn produces from forty to one hundred bushels per acre, according to quality of land and care of cultivation; potatoes are raised in large quantities, and are very profitable. The soil is a sandy loam, varying from light to heavy, and very rich. The presence of alkali in the lower lands is an annoyance and an evil, but it has been demonstrated that cultivation and drainage will relieve this, the only drawback in the midst of other advantages. Stock, especially hogs, are profitably raised. Several packing establishments are doing a large business, increasing yearly, in bacon, hams, and lard. In this direction there is room for indefinite

expansion, with sure profits to men who understand the business. Several large dairies supply butter to the surrounding towns and to Los Angeles. A vegetable farm sends its products in every direction.

"Westminster makes no specialty of semi-tropical fruits, but lovers of trees, and of the profits of them, have an advantage here of making orchards, of apples especially, that will vie with the neighboring orange groves in yearly money returns, with less outlay and less delay. Our apples are already celebrated for good and keeping qualities, and the trees are very productive. Westminster nursery, exclusively for the northern fruits, supplies demands in this direction, and its trees have a well-known reputation for quality and growth. The few old bearing apple trees here fully confirm all hopes of the health and profitableness of this branch of farming.

"The climate is all that could be desired, a refreshing sea breeze tempering the heat of summer. The sea, five miles away, gives opportunity for daily baths."

Westminster is noted for its wonderful peat lands, upon which crops of vegetables are raised that surpass belief.

Anaheim Landing is four miles from Westminster and twelve miles from Anaheim. It is an interesting point for the lover of the ocean, and is also a place of considerable commercial importance. It is the ocean outlet for the products of this neighborhood. There is here a wharf and warehouse. In the vicinity of Westminster raising corn and hogs is very profitable. Thomas Edwards, in one year, cleared above his expenses of living and all other expenses over ten thousand dollars off of two hundred acres of corn. Land here averages cheaper than most other parts of the county.

Garden Grove, a village close to Westminster, is the center of a community of farmers.

Orange, Santa Ana, and Tustin.

Orange, Santa Ana, and Tustin form the angles of a triangle. Santa Ana is three miles from Orange, and two miles from Tustin. They are connected by street railways, railroads, and by delightful drives. Together they form one continuous avenue lined by homes, surrounded by orchards and vineyards, with three business centers.

Orange is delightfully situated near the foot of the Santa Ana Mountains. Here and in the vicinity the fruit for which the town is named reaches perfection. The annual profit from a few acres of oranges here sounds fabulous.

An acre of ground will support seventy-five trees, and these, after a few years in learning, will often yield an income of six hundred and seventy-five dollars per year. Orange has an excellent hotel and a large schoolhouse. There are Christian, Methodist Episcopal, Baptist, German Lutheran, and Presbyterian churches.

But Orange has become most noted for its raisins. While Anaheim—five miles away—is a German, wine-making community, Orange is an American, raisin-producing community. The white Muscat grape, which is here used in raisin curing, matures at least three or four weeks sooner than in the San Gabriel or Los Angeles valleys.

One mile north of Orange is the raisin establishment of McPherson Brothers. In the center of this great enterprise is the village of McPherson, a collection of homes, a town hall, and a store for the accommodation of those employed in the raisin business.

One mile farther north is the beautiful Quaker village of—

Earlham.—The Quakers of the United States seem to be in great numbers looking toward Los Angeles County.

They now have comfortable, attractive meeting-houses at Pasadena, Whittier, and Earlham.

Two and a half miles north of Orange is the Santiago Cañon, one of the most beautiful, romantic recesses in the mountains that the convulsions of Nature have ever produced.

The tourist can spend a week in this cañon with pleasure and profit. The invalid can well spend months camping under oaks and pines beside the musical stream that runs down this great gash in the face of the earth.

Santa Ana.—Three miles from Orange and thirty-four miles from Los Angeles, it is ten miles from the ocean, and is the terminus of the San Diego branch of the Southern Pacific Railroad. It is also on the Riverside branch of the California Central, and on the line of the California Central that connects Los Angeles and San Diego.

The Santa Ana Valley, in which these three towns are situated, contains about five hundred square miles and is traversed by the Santa Ana River. The river furnishes the most of the water for irrigation, but the water for domestic purposes in Santa Ana is piped from artesian wells.

Santa Ana is the chief town and county seat of Orange County. Population 1890, 3,705; increased to six thousand within the past five years. The main street is built up almost solidly with substantial structures. Tasteful residences, in beautiful orchards and gardens, extend for miles in every direction. There are gas, electric lights, waterworks, and street-car lines; three banks, a large opera house, a daily and several weekly newspapers, good hotels, ten churches, a well-equipped public library, and excellent schools under the management of an efficient superintendent and eighteen teachers. There are two foundries, a large planing mill, brickyards, and several smaller manufacturing enterprises. One of the largest lumber yards south of Los Angeles is located here. A Chamber of Commerce has been organized with a mem-

bership of two hundred. A good opening exists for a cannery and fruit-dryer. There are several stables with fine racing stock near the city, and one of the best race tracks in the State is upon the Orange County Fair grounds adjacent to the city.

Two lines of railroad connect Santa Ana with Los Angeles, one of which connects it also with San Diego. The segregation of the great San Joaquin ranch of one hundred thousand acres would give Santa Ana a great impetus.

Tustin is the gem of this valley. It is two miles southeast of Santa Ana, and is the center of a community noted for their culture and industry. Here are broad, shaded avenues, flanked by beautiful residences, surrounded by and containing all that wealth and intelligent taste could desire.

Had Dr. Johnson described *Tustin* and the valley it is in, he would have pictured a much more attractive scene than the classic Happy Valley wherein dwelt Rasselas, the Abyssinian prince. We read that in that Happy Valley the trees dropped ripe fruit in the lap of Mother Earth every month in the year. So it is in *Tustin*. In the winter there are the orange and the lemon; in the spring, the apricot, the peach, and the nectarine; in the summer, the apple, the pear, and the plum; and autumn brings the ripe, rich, purple clusters of grapes. There is one great difference in these valleys.

Dr. Johnson says in the Abyssinian Valley the people wanted to get out but could not, while in the *Tustin Valley* they can get out but do not want to.

The seaport nearest to these towns is *Newport Harbor*, which has become quite a local shipping point. There is a railroad from Santa Ana to this place. Laguna is one of several places on the ocean where people camp, in order to enjoy surf bathing.

San Juan.

Orange County, south of Santa Ana and Tustin, consists almost entirely of immense ranches, which are gradually being subdivided into small farms. Great bodies of land and railroads are incompatible. All intelligent railroad managers encourage small farming. The more farms the more freight and passengers, while a ranch of ten or fifteen square leagues means little revenue for railroads, no schools, no churches, and no hotels. The California Southern runs via Santa Ana to San Juan-by-the-Sea and San Diego.

San Juan Capistrano (St. John the Beheaded) is the old Spanish town at the mission of the same name, which was founded in 1776. The building, completed thirty years later, was built of stone and cement, in a cruciform shape, with an immense dome, and was at the time of its completion the finest church in California. In 1812 an earthquake caused the top-heavy dome to fall in upon the assembled worshippers, and forty-four people were killed. Since that time, even to the present day, services are regularly held in a supplementary building. The mission was named in honor of the priest who, in the fifteenth century, headed the movement that caused the Turks to be driven out of Belgrade.

The village of San Juan, together with the mission, is an interesting point to visit. Here are productive olive, orange, and fig orchards, while the palm, here and there, adds to the picturesqueness of the scenery.

San Juan-by-the-Sea is the musical name of a town site laid out on the seashore two and a half miles away on the line of the California Southern Railroad during the boom. The town failed to materialize, and the site was recently sold at a low acreage price. Fifty years ago Richard Dana visited this romantic point, and in his *Two Years Before the Mast* describes it as follows:

" San Juan is the only romantic spot in California. The country here for several miles is a high table-land, running boldly to the shore, and breaking off in a steep hill, at the foot of which the waters of the Pacific are continually dashing. For several miles the water washes the very base of the hill, or breaks upon ledges or fragments of rocks which run out into the sea. Just where we landed was a small cove or 'bight,' which gave us at high tide a landing place between the sea and the bottom of the hill. Directly above us was the perpendicular bluff nearly two hundred feet high. We strolled about, picking up shells and following the sea, where it tumbled in, roaring and spouting among the crevices of the great rocks. The rocks were as large as those of Nahant or Newport, but, to my eyes, more grand and broken. Besides, there was a grandeur in everything around, which gave almost a solemnity to the scene; a silence and solitariness which affected everything. Not a human being but ourselves, and no sound heard but the pulsation of the great Pacific, and the great steep hill rising like a wall and cutting us off from all the world but the 'world of waters'! I separated myself from the rest, and sat down upon a rock, just where the sea ran in and formed a fine spouting horn.* Compared with the plain, dull, sand beach of the rest of the coast, this grandeur was as refreshing as a 'great rock in a weary land.' My better nature was strong upon me. Everything was in accordance with my state of feeling, and I experienced a glow of pleasure at finding that what of poetry and romance I ever had in me had not been entirely deadened by the laborious and frittering life I had led. Nearly an hour did I sit lost in the luxury of this entire new scene of the play in which I had so long been acting. Rejoining the crew, we went to the top of the hill. Here the country stretched out for miles, as far as the eye could reach, on a level, table-like surface, and the only habitation in sight was the white mission buildings of San Juan Capistrano, distant about three miles, in a lovely vale. Standing on the edge of the hill, and looking down the perpendicular heights, the sailors

" ' . . . That walked upon the beach
Appeared like mice, and our tall, anchoring bark

* In memory of the above writer, this prominent headland on the west of San Juan is called Dana's Point.

Diminished to her cock; her cock a buoy,
Almost too small for sight.'

"It was really a picturesque sight; the great height, and the continual walking to and fro of the men, who looked like mites on the beach."

The hot springs are in the mountains, twelve miles from San Juan. The territory of twenty-five miles of fertile soil between San Juan-by-the-Sea and Santa Ana will doubtless be the scene of great activity in the near future.

This closes a glance at Los Angeles and Orange Counties. Many points have not been touched. There are coal mines in the vicinity of Santa Ana, silver mines in the vicinity of Orange, San Gabriel, and Lang's Springs. There are bee ranches in all the mountain cañons, producing honey that is sent all over the civilized world; there are asphaltum beds, petroleum wells, natural gas, and numerous other industries and resources that have scarcely been mentioned. Special articles on some of these subjects will give all information desired.

Mineral Springs in Los Angeles and Orange Counties.

SANTA FÉ SPRINGS (FULTON WELLS).

These have been mentioned casually in the course of the description of the counties, but it is deemed best to mention them here separately. Probably the most famous and the best known are the Santa Fé Springs, formerly known as Fulton Wells. Here are several artesian wells, from which waters rich in medicinal virtues constantly flow. These waters are so near Los Angeles that many people from that city are constantly in attendance. There are numerous well-attested cases of remarkable cures.

In one gallon of the water there is 2.20 grains bicarbonate of soda, 12 grains bicarbonate of lime, 16.50 grains bicarbonate of magnesia, 13 grains bicarbonate of iron,

90 grains sulphate of soda, 10.40 grains chloride of sodium, 30 grains silica, and a large percentage of iodine and potash. There is also quite a volume of sulphureted hydrogen gas and carbonic gas.

Cases of rheumatism, diabetes, eczema, psoriasis, acne, dyspepsia, and scofula are specially benefited by these waters.

The distance from Los Angeles is twelve miles by the California Central Railroad, while the nearest station on the Southern Pacific is Norwalk, two miles away.

SAN JUAN SPRINGS.

For many years the San Juan hot springs have been noted for curing rheumatism and syphilis.

They are sixty-five miles from Los Angeles, and there has been no railroad or hotel near them, yet people in great numbers are constantly making pilgrimages to this far-away place.

There is no hotel, but the patients have tents or cheap houses to live in during their treatment.

Bulletin No. 32 of the United States Geological Survey gives the following analysis * of the main spring at San Juan:

	Parts in 100,000.
Sodium carbonate.....	11.10
Sodium sulphate.....	Trace.
Sodium chloride.....	10.53
Potassa.....	Trace.
Lime.....	"
Magnesia.....	"
Lithia.....	"
Silica.....	7.66
Total.....	29.29

* Oscar Loew, analyst, 1876.

Mud baths are considered very efficacious, and, as there are no permanent buildings, these anxious seekers after health improvise mud bathing houses of a primitive type. There are over a dozen of these springs spread over an acre of ground, and another hot spring, known as McKnight's, a half-mile away. There are also cold springs near by.

The temperature of the hot springs is 135° Fahr. They are fourteen miles from San Juan-by-the-Sea. For the present, the best means to reach them is to San Juan-by-the-Sea by the California Central, and from there by team.

LANG'S SPRINGS,

forty miles north of Los Angeles, at Lang Station, on the Southern Pacific Railroad, have attracted considerable attention lately.

WHITE SULPHUR SPRINGS.

Southern California has quite a variety of medicinal springs, both cold and hot. Besides those of a fluid nature, there are many hot mud springs that are largely used in cases of acute rheumatism. Every county in Southern California has mineral springs of various kinds and utility. One of the most lovely and excellent groups of springs of a mineral character is the group of ten white sulphur springs at Lang, on the Southern Pacific Railroad, forty-three miles north of Los Angeles.

Lang is situated in the Soledad Cañon, deep in the beautiful recesses of the Sierra Madre, the charming empress of all mountain chains. The cañon was named Soledad (solitary) long before the language of Milton and Shakespeare was spoken in its lonely wilds, when deer, lions, wolves, and bears made this their chosen home.

This passage through the mountains resounds to the roar of fifty trains of cars per day of the Southern Pacific

system, that wind through its echoing rocks with persons and property for all parts of the earth, and under the greenwood shade sits John Lang and the wife of his youth and old age, breathing the odors of myriads of flowers and trees gathered from all parts of the United States.

Owing to the angles of the cañon no tempest sweeps through it, and, at an elevation of eighteen hundred feet above the sea, among grand gray rocks, no frost ever hurts the delicate plants and flowers. As the shadows of the mountains lengthen across the cañon at the close of the day, the western gate of the rocky passage glows with amber and rose-color, while the eastern passage changes from blue to pale and fading emerald. The nobility of the scenery is not wasted upon the inmates of Lang homestead.

This clear, mild air, with its day breeze from the west and eastern breeze by night, and in a frostless region, is about as near perfection as can be found, and a genuine paradise for invalids, who come from far to this delightful spot to regain their vigor from the pure water of a mountain torrent, the exhilaration of almost constant sunshine tempered with breezes from the pines and cedars and fragrant shrubs, with the crystal-white sulphur fountains gushing out of the grand old mountains for the purification of the human system, a diet of venison and other game, and home-cooked food in abundance. This combination of advantages, added to fine scenery and rambles in shady cañons deep and wild, with frequent trains to the city and the sea, makes Lang Sulphur Springs in Los Angeles County the banner mountain resort for health, happiness, and comfort.

Mr. Lang, who formerly experienced periods of sickness in other localities, has now lived twenty-five years at the springs without sickness of an hour's duration.

The quality and virtues of the water of Lang Springs has been examined by many, including chemists and

medical men. Among the recent physicians who have examined and certified to the rare virtues of this water are Drs. Ellis, of London, England; Powers, of Texas; Sprague, of St. Louis; Fonda, of Albany, N. Y.; Barton, of New York; Kirkpatrick, of Los Angeles; McFarland, of Compton, Cal.; and Dr. Turner, of New Haven, Conn. The water is clear and cold, and contains sulphur, magnesia, and iron combined in most agreeable proportions.

San Fernando Sulphur Spring, on the south side of San Fernando Mountain, a few miles from the town of San Fernando, has quite a local reputation in rheumatism and skin diseases. Bulletin No. 32, United States Geological Survey, gives the following analysis.* According to the latest theory of curing consumption, these waters, containing carbonic-acid gas and sulphur, would be very efficacious in lung diseases:

	Parts in 100,000.
Sodium carbonate.....	6.21
Magnesium bicarbonate }	50.60
Calcium carbonate }	
Sodium sulphate.....	23.87
Sodium chloride.....	Trace.
Alumina.....	"
Silica.....	"
Phosphoric acid.....	"
Sulphohydric acid.....	5.00
Potassium.....	Trace.
Lithium.....	"
Iron.....	"
Manganese.....	"
Organic matter.....	"
<hr/>	
Total.....	85.68
Carbonic acid gas.....	In excess.

* Oscar Loew, analyst, 1876.

Four miles south of San Fernando is *El Cino Spring*. Bulletin No. 32, United States Geological Survey, gives the following analysis * of its waters. This spring has a flow of eighty-seven gallons per hour:

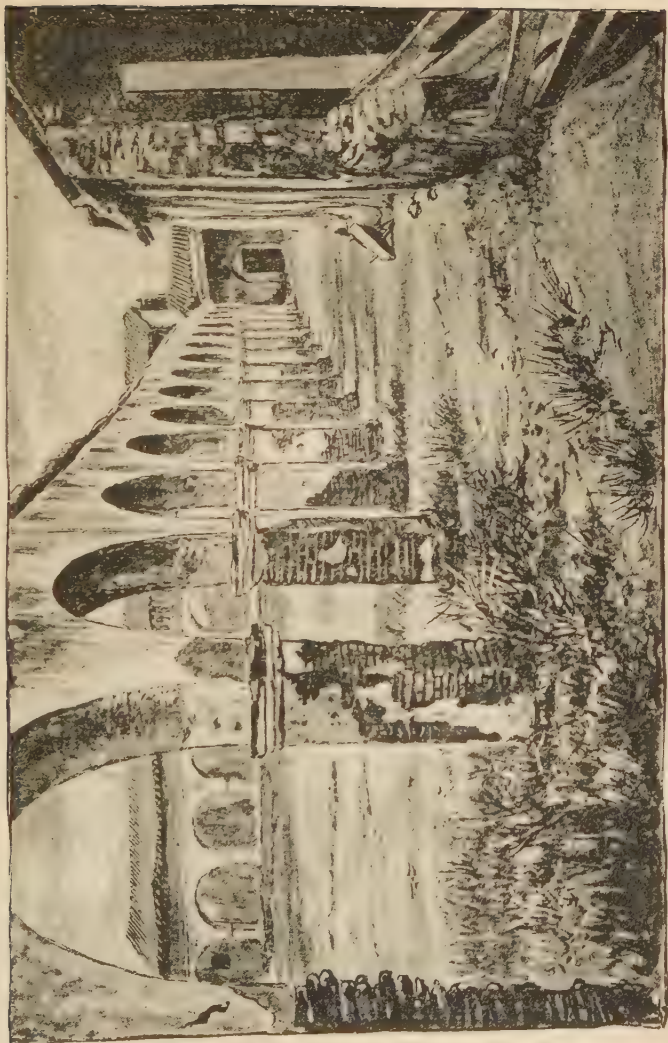
	Parts in 100,000.
Sodium carbonate.....	24.31
Magnesium carbonate }	32.17
Calcium carbonate }	
Sodium sulphate.....	54.46
Sodium chloride.....	2.93
Silica.....	11.50
Phosphoric acid.....	Trace.
Sulphohydric acid.....	"
Potassium.....	"
Lithium.....	"
Total.....	125.37
Carbonic-acid gas.....	In excess.

Helen Hunt Jackson and the Mission Indians.

When Father Junipero Serra first arrived in Southern California, May 14, 1769, he found about thirty thousand friendly, good-natured, intelligent Indians, divided into numerous tribes or bands, speaking thirteen dialects. They were after a few rebellions brought under the influence of the Church, and numerous missions established. These missions were invariably located in the most fertile and well-watered spots; and, as we go from ruin to ruin of these missions to-day, we are astonished that, with so brief an acquaintance with the territory, the good padre should have selected so unerringly the very best lands.

The Indians were soon all gathered around these missions, and worked as faithfully and obediently for these Franciscan Fathers as though they had been slaves. They were taught to till the ground, make wine and oil, raise

* Oscar Loew, analyst, 1876.



Ruins of Mission, San Juan Capistrano.

all kinds of grain, and to follow many trades; and the women were taught to sew, to make baskets and beautiful lace, and thus in each one of these missions would be found these natives employed in almost every industry of civilization.

The Indians were very devoted to the Church, and probably the years they were under the complete control of these Franciscan Fathers were the happiest in their history.

In 1834 the property of these missions was secularized by the Mexican Government, reserving to the Indians in indefinite terms what they would need for a home.* From this time on their condition became rapidly worse, and in 1852 the late Hon. B. D. Wilson, an old resident of Los Angeles County, made a report to the United States Government, showing the great injustice which had been done the Indians by the Americans. In 1881 Mrs. Helen Hunt Jackson had her attention specially directed toward these long-suffering people, and that winter she made a visit to their reservations and spent several weeks among them and in Los Angeles, getting facts in regard to their condition and needs. While in Los Angeles she received great aid in her work from the late Don Antonio F. Coronel and his talented wife. Mr. Coronel came to Los Angeles in 1834, and held various positions of honor while this city was under Mexican rule.

After it became subject to the Government of the United States he was elected and re-elected county assessor. In 1853 he was elected Mayor of the city of Los Angeles. In 1867 he was elected treasurer of the State of California. He formerly lived at the corner of Seventh and Alameda Streets, in the adobe house so beautifully described by Mrs. Jackson.† Mr. Coronel's father taught

* See Father Junipero and his Work, by Helen Hunt Jackson, p. 207, vol. iv, *Century Magazine*.

† *Echoes in the City of the Angels*, p. 205, vol. v, *Century Magazine*.

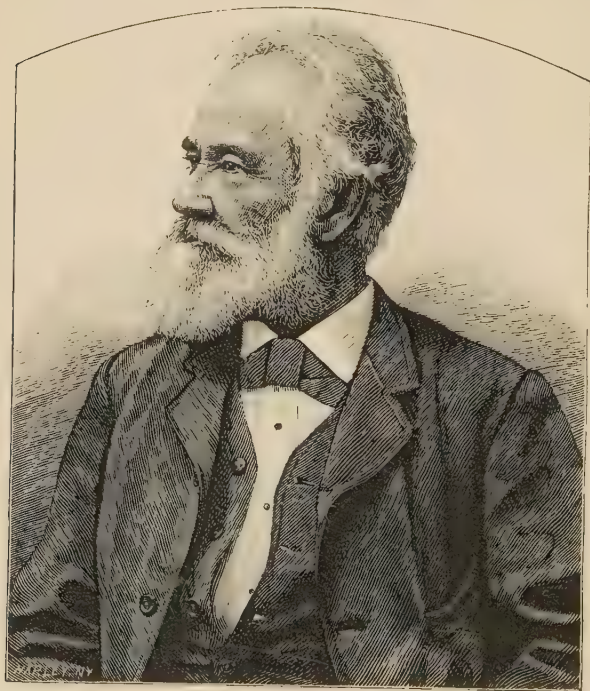
the first school in Los Angeles, and Mr. Coronel himself was at the time of his death, which occurred about



A Mission Garden.

a year ago, the oldest living teacher in the State of California. In this house we were showed the table on which Mrs. Jackson transcribed the notes for her series of arti-

cles in the *Century Magazine* of 1883, as well as most of the data upon which she founded *Ramona*. It was a typical Mexican home, surrounded by wide verandas and tropical shrubbery. Like so many other interesting relics of olden times in Los Angeles, it has had to succumb to



Hon. Antonio F. Coronel.

the resistless march of modern improvements. Inside are many interesting curios. Señora Coronel said recently, with tears in her eyes, that she well remembered Mrs. Jackson sitting in this room, with her hands folded, looking up with intense earnestness to the picture of Father

Junipero, and saying: "Ah! faithful, noble, dear old face: what an unselfish, devoted life you led! All I ask, is to be permitted to meet you in the other world." During her visits to Los Angeles she would every day drive from her hotel to this hospitable home.

"Near the western end of Don Antonio's porch is an orange tree, on which were hanging at this time twenty-five hundred oranges, ripe and golden among the glossy leaves. Under this tree my carriage always waited for me. The señora never allowed me to depart without bringing to me in the carriage farewell gifts of flowers and fruit; clusters of grapes, dried and fresh; great boughs full of oranges, more than I could lift. As I drove away thus, my lap filled with bloom and golden fruit, canopies of golden fruit over my head, I said to myself often, 'Fables are prophecies. The Hesperides have come true.' "*

The information that Mrs. Jackson received from the Coronels was so full and complete that she gives an accurate description of the Camulos Ranch,† the home of Ramona, although she only spent two hours there.

The following letter describes Mrs. Jackson's only visit to this noted Spanish home:

"SANTA BARBARA, CAL., *January 30, 1882.*

"My Dear Friends, Mr. and Mrs. Coronel: . . . I have now been one week in Santa Barbara, and am still homesick for Los Angeles. I have not as yet seen anything so fine as the San Gabriel Valley, and San Bernardino Mountains with the snows on the tops, and I have not found any one to tell me the things of the olden time so eloquently as you did.

"I have seen Father Sanchez, Father O'Keefe, and Father Francis, at the mission, and have obtained from their library some books of interest. From the west window of my room I look out on the mission buildings. The sun rests on them from sunrise to sunset, and they seem to me to say more than any

* Echoes in the City of the Angels, p. 205, vol. v, Century Magazine.

† Ramona, p. 19.

human voice on record can convey. You will perhaps have heard that I was so unfortunate as not to find Mrs. Del Valle at home, so I only rested two hours at her house and drove on to Santa Barbara that night. I saw some of the curious old relics, but the greater part of them were locked up, and Mrs. Del Valle had the keys with her.

"The most interesting part of my journey was San Fernando. There I could spend a whole day, and I must tell you of a mistake I made; perhaps if you see Mr. Pico you can rectify it for me. He said to me, when he was showing me some of the relics they have, 'Now, if you like, you can take some one of these things.' Of course I desired very much to have some of them; but I replied, merely out of the wish not to seem greedy or ungrateful: 'Oh, you are too kind to think of such a thing. I am afraid you ought not to give away any of them. Do you not rather prefer to keep them for the Church?' And then he did not again offer them to me, and I was all the rest of the time waiting and hoping that he would; but I came away without having the opportunity again to take anything. I suppose you will think I was very stupid. Indeed, I think so myself; but it is partly that I do not understand the customs of the Spanish people in regard to such things.

"If it should happen that you see any of the family, you can tell them of my regret for having made such a mistake, and that I would be very glad to have anything they would like to part with. One of the old candlesticks I would very much like to have, or one of the old books of St. Augustine I had in my own mind decided that I would choose.

"I also wanted very much to have a piece of one of the old olive trees if I could have found one that had blown down—a straight section of the trunk sawed across, about six inches thick, to make a round block, polished, to set my stone bowl on. The driver promised to take two of the old palm leaves to you to keep. I thought you would like one; the wind had strewed the ground with them. But I think it rained so hard the days he went back he did not stop to look for palm leaves.

"When I come again with the artist we will go to San Fernando. It is one of the places I desire to see twice.

"I send to you also by to-day's mail a copy of my little volume of poems. I thought that you would like that volume better than

any other I have written. In a little more than four months I hope to see you again.

" Truly yours, and with many thanks for all your kindness,

" HELEN JACKSON."

Mrs. Jackson rapidly became enthusiastic in her work for the Mission Indians, and succeeded in securing the appointment of herself and Abbot Kinney, Esq., of Los Angeles, as special agents of the United States Government to investigate the condition of the Mission Indians. The following copy of a letter from Mrs. Jackson to the Commissioner of Indian Affairs, Washington, lucidly outlines the work she desired to perform:

"To the Commissioner of Indian Affairs :

" Dear Sir: I thank you for the expressions of confidence in your letter of the —. I hope the results of my work may not disappoint you. I do not undertake the mission without misgivings; but I trust that my earnest intent in the matter will stand me instead of knowledge and experience, and I am sure that Mr. Kinney's clearheadedness and familiarity with the region will be an invaluable assistance.

" Since the receipt of your letter, I have given the subject much thought, and will now outline to you what I understand to be the scope and intent of our investigations:

" 1. To ascertain the present number of Mission Indians, where they are living, and how.

" 2. What, if any, Government lands remain in Southern California which would be available for homes for them.

" 3. If there is no longer left enough Government land fit for the purpose, which I strongly suspect, what land or lands can be bought, and at what prices?

" 4. What the Indians' own feelings are in regard to being moved onto reservations.

" So far as I can judge from what I saw and heard last winter, I believe that those Indians now living in villages would almost rather die than be removed. Yet, in many instances, the lands on which the villages stood have been already patented to white men, and I understand that, in such cases, there is no possible redress for the Indians.

"Again, I am entirely sure that, to propose to those self-supporting farmers that they should be subjected to the ordinary reservation laws and restrictions, would be not only futile, but insulting. There is no more right or reason in an Indian agent, with the Indian agent's usual authority, being set over them, than there would be in attempting to bring the white farmers in Anaheim or Riverside under such authority.

"If this statement of what we are to do meets your views, will you kindly have it put into shape in form of a letter of specific instructions, such a letter as will give me full authorization under all circumstances, both with the Indians and at the land offices of the different counties? There should be also a separate letter, authorizing Mr. Kinney joining me in the work, and guaranteeing his expenses. One item of expense has occurred to me since my letter to Mr. Teller, and that is of an interpreter. In visiting the Indian villages, we should be obliged to take an interpreter with us. This should be provided for. My own expenses I will rate, as I told Mr. Teller, at twelve hundred dollars. This will cover my going out and returning. If it takes longer and costs more, I will defray the remainder myself.

"I would like these letters in duplicate, to guard against accidents."

Mrs. Jackson and Mr. Kinney made their report, and the following letter tells how it was received, and gives us a glimpse of her passionate fondness for Indian relics; but it also shows, which is of still greater interest, her method of getting material for *Ramona*, and proves that, in writing this story, she was actuated by a philanthropic impulse similar to that which impelled Harriet Beecher Stowe to write *Uncle Tom's Cabin*.

"COLORADO SPRINGS, *November 8, 1883.*

"My Dear Friends, Mr. and Mrs. Corone! I send you herewith the very bad picture of myself, which I think you will wish you had never seen. If you do, you are quite at liberty to burn it up.

"I had forgotten that I paid you the five dollars for the work done by the Indian woman. Keep it, if you please; there may

be something to come from Father Ubach to pay expressage on, or there may be a box to be made to hold all my stone mortars, etc., which Mr. Bliss is going to get for me one of these years. It may be well for you to have a little money of mine on hand to meet these possible charges. I have asked Father Ubach to send to me to your care the old looking-glass frame which I forgot to put into the box he sent here; it was really one of the things I cared most for of all the relics promised me, and I was exceedingly sorry he forgot it. He, however, did much to atone for this by putting into the box a piece of one of the old olive trees from the San Diego Mission. I shall present part of it to Archbishop Corrigan. I think he will value a piece of one of the fruit trees planted by Father Junipero. I am sure you will have rejoiced at the removal of Lawson from the agency of the Mission Indians. I hope the new man will prove better; he hardly can prove worse. I wish we could have selected the new agent ourselves; but it was a political appointment, of which we knew nothing until it was all settled. Our report has been favorably received, and its recommendations will be incorporated in a bill before Congress this winter. I hope the bill will pass. But I know too much of Washington to be sanguine. However, if we had accomplished nothing more than the securing the appointment of Brunson & Wells, Los Angeles, as United States attorneys, to protect the Indians' rights to lands, that would be matter of gratitude. I suppose you have heard of that appointment. I hope through their means to save the Saboba village, San Jacinto, from being turned out of their home. Now, I am as usual asking help. I will tell you what my next work for the Indians is to be. I am going to try to write a novel, in which will be set forth some Indian experiences in a way to move people's hearts. People will read a novel when they will not read serious books. The scenes of the novel will be in Southern California, and I shall introduce enough of Mexicans and Americans to give it variety. The thing I want most, in way of help, from you, is this: I would like an account, written in as much detail as you remember, of the time when you, dear Mr. Coronel, went to Temecula and marked off the boundaries of the Indians' land there. How many Indians were living there then? What crops had they? Had they a chapel? etc. Was Pablo Assis, their chief, alive? I would like to know his whole history, life, death, and all,

minutely. The Temecula ejectment will be one of the episodes in my story, and any and every detail in connection with it will be of value to me. I shall also use the San Pasquale Pueblo History, and I have written to Father Ubach and to Mr. Morse, of San Diego, for their reminiscence. You and they are the only persons to whom I have spoken of my purpose of writing the novel, and I do not wish anything said about it. I shall keep it a secret until the book is about done.

"I hope very much that I can succeed in writing a story which will help to increase the interest already so much aroused at the East in the Indian question.

"If you think of any romantic incidents, either Mexican or Indian, which you think would work in well into a story of Southern California life, please write them out for me. I wish I had had this plan in my mind last year when I was in Los Angeles. I would have taken notes of many interesting things you told me. But it is only recently, since writing out for our report the full accounts of the different bands of Indians there, that I have felt that I dared undertake the writing of a long story.

"I am going to New York in a few days, and shall be busily at work there all winter on my story. My address will be, 'The Berkeley,' corner Fifth Avenue and Ninth Street.

"I hope you are all well, and enjoying the same sunshine as last year. Mr. Jackson is well, and would send his regards if he were at home.

Yours, always cordially,

"HELEN JACKSON."

Charles Dudley Warner, in a letter some years ago written from Los Angeles to the Critic, says: ". . . It was my good fortune to see Mrs. Jackson frequently in New York, when she was writing *Ramona*, which was begun and perhaps finished at 'The Berkeley.'

"The theme had complete possession of her; chapter after chapter flowed from her pen as easily as one would write a letter to a friend. . . . When she became interested in the Indians, and especially in the hard fate of the Mission Indians in California, all her nature was fused for the time in a lofty enthusiasm of pity and indignation,

and all her powers seemed to be consecrated to one purpose. . . . I am certain that she could have had no idea what the novel would be to the people of Southern California, or how it would identify her name with all this region, and make so many scenes in it places of pilgrimage and romantic interest for her sake."

Every reader of *Ramona* remembers the birth, christening, and death of "Blue-Eyes," and the following letter will show how Mrs. Jackson tried to get an Indian synonym for this name, but her efforts were in vain:

"NEW YORK, *February 13, 1884.*

"Dear Mr. and Mrs. Coronel: I am glad you gave me my choice of the pictures: for the two I have taken I like, and the other two I think very bad. Mr. Sandham can have them. I have taken the two which show the side-view of your faces.

"I hope you are having better weather in Los Angeles than we have here. For three weeks we have scarcely seen the sun. Snows, rain, fogs, sleet, ice, have been our daily diet. It is far the worst winter I ever saw.

"Mr Jackson returned to Colorado last month. I look for him here again in March.

"I am still at work on my story. It is more than half done.

"I wish you would ask those Indian women, who made the lace for me, what would be in their Pala or San Luis Rey dialect, the words for blue-eyes. I want to have a little child called by that name in my story—if the Indian name is not too harsh to the ear. I often wish myself in Los Angeles, I assure you, in this horrible weather. Did you receive the copy of our report on the Mission Indians? I ordered it sent to you.

"With many thanks for the pictures, and warm remembrances to you both and to Miss Mercedes,

"I am always, yours truly,

"HELEN JACKSON."

The following letter is the beginning of the end. Mrs. Jackson never recovered from the accident here recounted.



Ramona's Home, Camulos Ranch.

Mrs. Jackson in this letter also pronounces for Cleveland and Hendricks and the Democratic party, although she had received her appointment and allowance for expenses from a Republican administration, and speaks of Senator Dawes as the Indian's friend:

"COLORADO SPRINGS, *September 4, 1884.*

" My Dear Friends: I am sorry to tell you that the bad news you heard of me was true. On the 28th of June I fell from the top to the bottom of my stairs, and broke my left leg—a very bad break; the large bone crushed in for about two inches, and the small bone snapped short. When they found me the leg was doubled at right angles between the knee and ankle. Mr. Jackson thought when he saw it I would never walk again; but, on the contrary, I am going to have as good a leg as ever. A great triumph for a woman of my age and weight. I am on crutches now, and very bad work I make with them, I assure you. I am too heavy and too much afraid. But I have a wheeled chair, in which I can go all about the house, and on the veranda, and I have had an exceedingly comfortable and pleasant summer in spite of the broken leg, and by New Year's the doctor thinks I will be walking well.

" The message from the Rincon Indians made my heart ache. I shall send it to the Indian Commissioner at Washington; but, as you say, we can not hope for much result from it. The firm of Brunson & Wells, lawyers in Los Angeles, were appointed last year, by our request, as United States attorneys, to act in all cases relating to Indian lands. It is a long time since I have heard from them. When I last heard, they hoped to save the Saboba lands for those Indians. It might be well for you to see them, and lay the case of these Rincon Indians before them. Say to Mr. Wells that I asked you to do so. You know that the time of the presidential election is now near, and at such times no man cares for anything but politics. If Blaine and Logan are elected, I shall fear a sad four years for the Indians. Logan is an Indian-hater. I do not know what the Democratic party would be on the Indian question. It could not be worse than the other, and it might be better. The only message you can give to those Indians from me, is that I have sent a copy of their message to

Washington, and that is all I can do. That my heart aches for them, and has never ceased to ache since the day I was in their village. That many good people are interested for their race, and are trying to accomplish something for their help; but the men in power in the Government change so often, it is hard to get anything done. And Congress (the great Council) will not give the money we ask for. If they could once be made to understand that everything depends on Congress voting the money for their relief, they would realize more that the officers of the Government are powerless to keep their promises. There are Indians starving to-day in Montana, because Congress last winter cut down the appropriations which the Indian Commissioner asked for for the year. You see when that is done, the Secretary of the Interior and the Indian Commissioner are utterly helpless. They have no way of getting money except by Congress voting it. I sometimes wonder that the Lord does not rain fire and brimstone on this land, to punish us for our cruelty to these unfortunate Indians.

"Another Commission is coming out to California this autumn to look after the Round Valley Indians. One member of it is Senator Dawes, who is a good friend to Indians. I have begged him to go down also into Southern California and see the Mission Indians. If he does, he will call on you. I have given him a letter to you. I never received the portraits of Father Junipero you speak of having sent me. Did you send them to this place, or to New York?

"Mr. Jackson is very well, and would desire his remembrances to you both if he were at home. But he is in Denver at present. With many thanks for your letter, and warm regards to you both, also to your niece,

I am always, truly yours,

"HELEN JACKSON."

Mrs. Helen Hunt Jackson is dead, but her work goes vigorously on.

As a result of her efforts, a law was passed providing for a division of the reservation lands among these Indians, so that each one would have in his individual right one hundred and sixty acres, not subject to liens, mortgages, or debts of any nature for twenty-five years. There

are in this law various other important points. In June, 1887, an agent from Washington and several members of the Indian Rights Association from Los Angeles and Pasadena had a great conference with the Indian chiefs, or captains, as they are now called, at the celebrated Pala Mission, to explain the provisions of this bill. These philanthropists went to Temecula, one hundred and three miles from Los Angeles, by the California Central Railroad, and from this historic point went with teams over an interesting mountain road to the Pala Mission, twelve miles away.

This mission is situated in a fertile valley, surrounded by a stupendous wall of mountains. Only a small portion of the valley now belongs to the Indians. Even the old mission itself has passed into the possession of others. Here, where but a few years ago were Indians following almost every honorable industrial avocation, under the benignant rule of the Franciscan Fathers, all is now silence, ruin, and desolation.

But, while the mission and its immediate surroundings are thus neglected, there are around it several fruit and grain ranches in a high state of cultivation. At the date of this conference the apricots and peaches were just ripe, and the orchards were radiant with luscious fruit, that bent many of the boughs almost to the ground. Early on the morning of the conference the Indian chiefs began coming in from the various reservations; the majority on horseback, others in spring wagons, but all well dressed in the American style. There were captains and generals, quite a number of whom spoke English, Spanish, and three or four Indian dialects fluently.

There were among them several who might have been Allessandros but no Ramonas. The agent mounted a step of the old mission, and the Indians gathered anxiously around. Each one had hat in hand, and they all stood there in the hot sun, with bared heads, watching the

agent closely as he spoke, and then listening attentively to the Hon. A. F. Coronel, of Los Angeles, as he interpreted the agent's remarks. There were in this audience some noble faces, to whom the term "noble red man" could be fittingly applied.

One noticeable feature was their serious earnestness. They all remembered Mrs. Jackson, who made prolonged visits among them, and when the agent told them that he had promised Mrs. Jackson on her deathbed that he would go on with her work, they were visibly affected. Mrs. Jackson's name is familiar to almost every human being in Southern California, from the little three-year-old tot, who has her choice juvenile stories read to him, to the aged grandmother who shed tears of sympathy for Ramona.

At about the same time the Indians of the Pala Mission in San Diego County, one hundred miles south of Los Angeles, were talking of Mrs. Jackson's work and death, there was in progress the annual *fiesta* of the Del Valle family at Camulos, their beautiful ranch home, forty-five miles north of Los Angeles, in Ventura County.

Camulos is probably the only typical Spanish ranch now remaining in Southern California, and was wisely selected by Mrs. Jackson as the home of Ramona. Her description of this place is delightful reading, and prepares the visitor to some extent for the treat in store for him. The large, picturesque, adobe house is encircled by immense vineyards, miles of tall and shapely olive trees, and beautiful orange groves, with their bright-green foliage, half covering their golden treasures.

Mrs. Del Valle, stately and entertaining, is surrounded by a retinue of servants so large that, to care for them, she requires all the appurtenances of a village.

Here is the school for her servants' children, the storehouse where all supplies are doled out, the beautiful little chapel in the garden where she has daily prayers, and

the post office through which their correspondence is sent and received.

Here is the primitive mill for crushing the olives to make the oil, the wine-press making the healthful claret for which the place is noted, the still where grape brandy is manufactured, the long cellars in which the wine and brandy are stored, the warehouses in which are housed enough grain and bacon to withstand years of famine, and the extensive stables where are dozens of horses.

The annual *fiesta* is a gathering of the Del Valle family and a few invited guests that takes place in July, and lasts four days. The train from Los Angeles arrived about noon of the first day with twenty-five of the family and friends. Señora Del Valle stood at the entrance to the garden and welcomed each guest. The visitors were quickly conducted to their rooms, where water, comb, and brush soon removed all trace of the midsummer car ride. Dinner was then announced, and Senator Reginald F. Del Valle, a prominent Los Angeles attorney, sat at the head of the table, which was under a shady arbor in the garden but a few steps from the chapel. Two barbecued pigs, done to perfection, formed the principal meat of this meal, but there were olives, cooked and pickled, various Spanish dishes, containing almost invariably *chilis* (red peppers) and olives, delicious dessert, claret and white wines *ad libitum*, and the regulation black coffee. Surrounding this table were members of numerous distinguished Spanish-American families. The two features that attracted the particular attention of an American were the gallantry of the men and the beauty and vivacity of the ladies.

The afternoon was spent by the guests hunting, riding, singing, reading, talking, and mountain climbing, just as each one chose. In this way of entertaining, and yet giving each visitor perfect freedom to do just as he pleased, the hostess and her daughters displayed rare tact.

Watermelons and fruits of various kinds were always at hand.

At 7 P. M. another bountiful meal was served in the arbor, which was brilliantly lighted by lanterns fastened between the innumerable clusters of purple grapes that hung overhead. This time two roasted kids were served—and delicious they were. After an hour's walk, all gathered in the spacious parlor, and, with music on the piano, the organ, and the guitar, and vocal solos and choruses, time quickly sped. Fireworks in the garden closed the entertainment for the first day.

The next morning all were out bright and happy, and at breakfast, where everything was served with the usual profusion, the American would notice that olives were again eaten by all, which leads to a reflection in regard to the value of this ancient food.

“It took the English colony of India a century to find out that the strong meat diet of the north, used in the climate of India invariably produced a diseased liver and death. Now that they, learning by experience, are adopting the light vegetable diet of the natives, they endure the climate much better.

“The oil, which in southern latitudes has most generally taken the place of the animal fats, is the oil of the olive. It is lighter and less heat-producing than the oils or fats of animal origin. It is used in cookery, is an ingredient of every salad, and in the shape of the pickled fruit takes somewhat the place of meat upon the table. Its high nutritive value is shown by the fact that the laborers of the Riviera perform the severest toil upon a diet chiefly of black bread and olives.

“One who has never personally tested the olive as an article of food can hardly understand its value. The writer has frequently, for days at a time in the warm weather, almost lived upon bread and olives, feeling as well nourished as upon a meat diet.

“The culture of the olive seems to be almost coeval with the races of the Orient. Under the shade of its fruit-laden branches rested the patriarchs in the old tent of Syria. It accompanied the Greco-Latin in his migration along the shores of the Medi-

terranean. It passed with the Roman arms to Gaul and Hispania, and crossing the ocean with the Conquistadors, adds its pale-green foliage to the verdure of every old mission orchard from Vera Cruz to Monterey.

"It is no chance, no mere sentiment that thus made it, like the vine and the corn-producing plants, the companion of race migration.

"Whenever we find a plant thus accompanying man for thousands of years in his migrations across oceans and continents, it is because of the positive utility of food value which it is proved to possess for the human race.

"Somewhat of the extent to which that economic food value is estimated by one nation may be surmised from the fact that in Italy the number of olive trees under cultivation is one hundred millions, covering one million acres.

"It is a safe rule to follow, that the foods which a people have adopted after inhabiting for generations any especial belt of climate, are the foods best suited to the requirements of the system in that climate; that back of it is the working of some general law." *

After breakfast an hour was spent by the good hostess and her Catholic guests in the chapel.

A fat, young steer was then lassoed by a *vacquero*, the aorta was dexterously severed with a knife, and then began some dissecting that would have surprised the most skillful anatomist. The skin was quickly and neatly taken off and spread out to protect the beef from the earth, the muscles were then, layer after layer, deftly removed, and in an incredibly short time this Mexican butcher had the meat ready for the fire.

A fire in a pit near by had been heating stones, which were now red-hot. Iron rods were laid across the pit, and the whole beef put on to roast for dinner.

The noon train from Los Angeles added materially to

* The Anglo-Teuton and the Olive, by J. P. Widney, A. M., M. D. (See p. 82, Southern California Practitioner, March, 1886.)

the number of guests, and seventy-five as happy people as ever lived sat around the heavily-laden table under the grapevines. What a delicious meal that was! The eating was happily interspersed with laughter, conversation, and brilliant repartee.

After the dessert had been enjoyed toasts were in order, and among those to the Del Valle family, the State of Southern California, etc., a gray-headed Mexican gentleman, after delivering a fervid, eloquent eulogy, proposed a toast to the memory of Mrs. Helen Hunt Jackson, which was drank standing. How true the statement made on another page: "Mrs. Jackson is dead, but her work still lives in the hearts of the people of Southern California."

SAN DIEGO COUNTY.

San Diego County comprises the extreme southwest corner of the United States, and extends from the Pacific Ocean eastward to the Colorado River. It has an area of eight thousand four hundred square miles—three hundred and sixty more than the State of Massachusetts, and five hundred and seventeen square miles more than the States of Rhode Island, Connecticut, and Delaware combined. It has seventy-five miles of seacoast. Between the coast and the mountains, a strip of country from thirty to forty miles wide, the ascent is gradual and varied with fertile and picturesque valleys, slopes, and *mesas*. From the summit of these mountains, which culminate in a peak about six thousand feet above sea level, the land falls rapidly away into the desert and finds its lowest point in a depression two hundred and fifty or three hundred feet below the level of the sea.

This great territory is bounded on the west by the Pacific Ocean, on the south by Mexico, on the east by the Colorado River, and on the north by Riverside County.

San Diego County first became noted on account of

the beautiful bay of that name, a land-locked harbor of inestimable value as an inlet and outlet to a vast interior country. This bay was discovered in 1542 by Juan Rodriguez Cabrillo, a Portuguese navigator in the employment of Spain. Sebastian Vizcaino surveyed and named it in 1602. Professor George Davidson, of the United States Coast Survey, says: "Next to that of San Francisco, no harbor on the Pacific coast of the United States approximates in excellence the bay of San Diego."

As the visitor comes into this beautiful sheet of water by sea from the north, he passes around a rugged promontory known as Point Loma, on which is located the United States Lighthouse. To the south is the point of the peninsula now known as Coronado Beach, and in front is this placid resting place for the storm-tossed vessel. "What a beautiful sight!" is the exclamation that involuntarily springs to the lips.

This bay is about twelve miles long and one mile wide. If the visitor comes into the harbor by night, as many do who have first visited San Francisco and Los Angeles, he will be dazzled by the innumerable lights on Coronado Beach, and by the numerous electric lights from San Diego city, all giving a premonition of the commercial metropolis he is about entering.

Coronado Beach is the name of the peninsula that juts out in front of San Diego and National City, and gives them their excellent harbor and especially salubrious climate. This peninsula was purchased by a company, with E. S. Babcock as president. They have already erected there the largest hotel in Southern California, and have sold millions of dollars worth of lots. To-day this peninsula is the site of one of the liveliest, prettiest towns to be seen in California. Ten years ago a barren waste; to-day a prosperous town with hundreds of pretty cottages, with beautiful shrubbery and flower gardens, attractive parks, and delightful drives.

There are now on Coronado Beach several stores, several fine churches, and a good schoolhouse. Coronado is twelve miles long and varies in width from a few yards at the isthmus to two miles, where the town and hotel are located. From the ferry a ride on the upper deck of a two-story electric car carries the tourist through avenues of palms and magnolias to Hotel del Coronado. This hotel contains nearly eight hundred rooms, and covers more space than any other hostelry in the world, the amount of grounds on which it stands being about four and a half acres. It is built in what is called the old mission or Spanish style, forming a quadrangle around an interior court or *patio*. This court is beautiful with fountains playing, climbing vines, the bright-red hibiscus, the royal date palms, and many varieties of flowering shrubs and plants. The hotel is surrounded by one hundred acres of gardens and lawns, and there are no signs of "Keep off the grass," "Don't pick the flowers," or "Look out for the dogs." The hotel was opened in 1888, and has since entertained over three hundred and fifty thousand guests.

While the winter climate of Coronado is delightful, the summer is most remarkable, as is indicated by the following table:

Comparative Maximum Temperature during July and the first Fifteen Days of August, 1895, in Boston, Baltimore, and Atlantic City upon the Atlantic Coast and Coronado and Los Angeles on the Pacific Coast.

		Boston.	Baltimore.	Atlantic City.	Coronado.	Los Angeles.
July	1.....	78	73	73	69	77
"	2.....	72	77	73	68	75
"	3.....	77	80	74	70	73
"	4.....	71	76	77	67	75
"	5.....	78	71	68	67	82
"	6.....	74	83	71	68	85

	Boston.	Baltimore.	Atlantic City.	Coronado.	Los Angeles.
July 7.....	83	86	76	68	84
" 8.....	85	83	77	67	78
" 9.....	78	90	74	67	77
" 10.....	75	75	88	67	75
" 11.....	68	69	75	66	74
" 12.....	78	78	70	65	76
" 13.....	72	82	72	66	80
" 14.....	71	76	73	71	82
" 15.....	69	74	77	75	83
" 16.....	69	82	73	71	81
" 17.....	66	90	74	69	81
" 18.....	82	92	77	72	82
" 19.....	82	85	85	75	79
" 20.....	80	93	75	65	75
" 21.....	82	95	78	66	74
" 22.....	83	88	81	67	77
" 23.....	82	86	88	66	78
" 24.....	82	78	84	69	83
" 25.....	81	83	75	70	82
" 26.....	80	85	75	71	79
" 27.....	79	87	77	71	78
" 28.....	77	78	76	70	77
" 29.....	80	82	79	71	78
" 30.....	79	81	75	70	80
" 31.....	72	74	74	67	81
Mean.....	77 +	81 +	76 +	68 +	78 +
August 1.....	71	75	72	73	83
" 2.....	73	79	75	70	83
" 3.....	79	84	78	71	79
" 4.....	82	88	78	68	85
" 5.....	86	87	75	70	84
" 6.....	89	86	76	72	83
" 7.....	80	89	76	71	83
" 8.....	84	91	76	70	79
" 9.....	84	94	81	70	80
" 10.....	86	96	79	69	78
" 11.....	79	95	84	69	76
" 12.....	73	91	84	70	78
" 13.....	73	89	80	69	83
" 14.....	79	87	85	74	82
" 15.....	82	87	85	71	88
Total sum.....	1,200	1,318	1,184	1,057	1,224
Mean.....	80	87 +	79 +	70 +	81 +

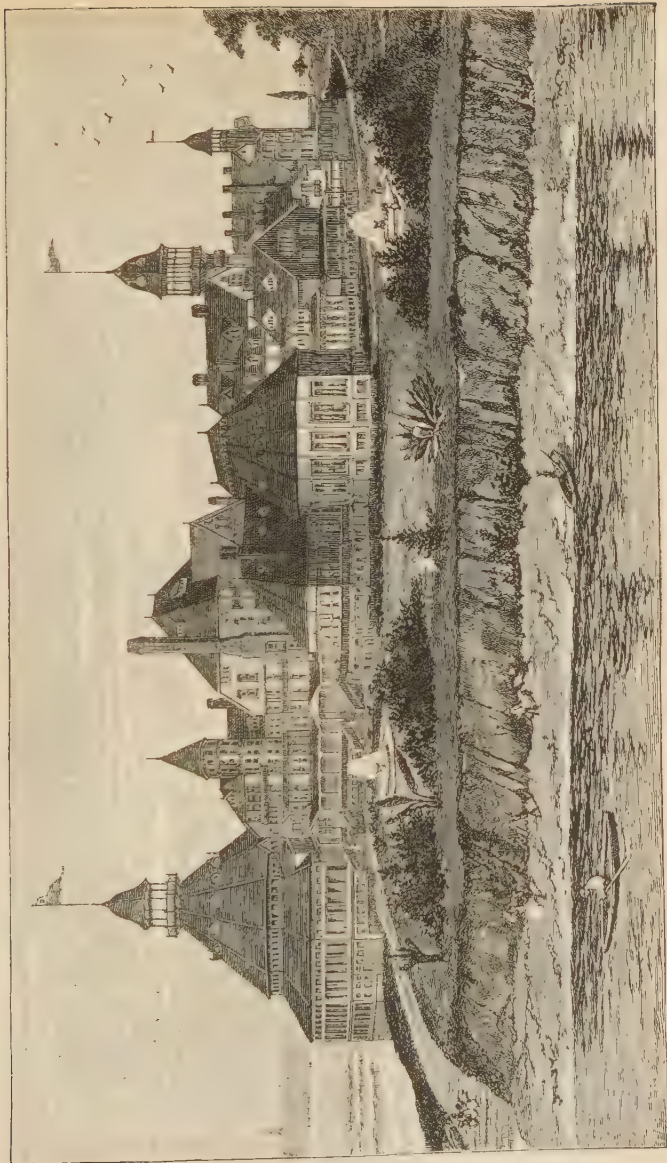
The above table shows that during the month of July, 1895, the mean maximum temperature of Boston was 77°, of Atlantic City 76°, of Los Angeles 78°, and of Baltimore 81°, while the mean maximum temperature during the same month at Hotel del Coronado was only 68°. During the first fifteen days of August the maximum temperature of Baltimore was 87°, of Los Angeles 81°, of Boston 80°, and of Atlantic City 79°, while of Coronado during the same time it was only 70°. As is stated on a previous page of this work, the annual mean temperature of a locality is practically of no value as a guide to climatic conditions, but the mean maximum temperature is quite a different proposition, and is a very graphic indicator of the real comforts or discomforts of the climatic conditions.

The nights of Coronado are dry and pleasant. Persons can be out of doors with impunity at all hours. This is due to the fact that there is invariably a night breeze from the Colorado Desert. This climate has proved particularly efficacious in the relief of throat, bronchial, and nervous difficulties. Mr. Babcock, the proprietor of this great hotel, came here himself a condemned consumptive in 1884. He is now the picture of health and activity.

National City is near the head of San Diego Bay, at the terminus of the Southern California Railroad.

It is four miles from the business center of the city of San Diego, with which it is connected by a steam-motor street railway and by the California Southern Railroad. In fact, National City can be said to be a part of San Diego, because it is almost a continuous town from one place to the other. Here are located the car shops of the railroad, a carriage factory, and an olive-oil factory.

Right here the value of this olive oil should be impressed on the reader. Consumptives frequently find it far more beneficial than cod-liver oil; it is also a choice article for the table. There are but a few brands of olive oil on the market in the United States that should be used



Hotel del Coronado, Coronado Beach, with a glimpse of San Diego Bay.

on the table or as a medicine. One is that made by Elwood Cooper, of Santa Barbara; the other, by Kimball, of National City. The writer of these lines knows the importance of this statement, and has tested and satisfied himself of the universal adulteration of imported oils. Not being adulterated, the olive oil of Santa Barbara and National City is more expensive than the imported, the cost being from one dollar to one dollar and a half per bottle.

At National City, as at San Diego, the ship comes alongside the railroad track. There is a weekly newspaper, a bank, and the usual number of stores and churches for a town of twelve hundred inhabitants. National City is noted for its oranges, lemons, apples, and pears.

Chula Vista is a two-thousand-acre tract of land laid out in five-acre lots with water from the Sweetwater System. This land is especially devoted to lemon culture. There is one orchard of six hundred acres and numerous five-acre orchards. The lemon is proving the most profitable of any fruit crop in this section. At Chula Vista they make seven gatherings per annum, extending over the whole year, thus producing a continuous income without the necessity of hurrying the crop to market at any one time of the year. One orchard of fifteen acres belonging to J. M. Cook, the trees of which are five years old, produced in one year four thousand boxes of Lisbon and Villa Franca lemons, realizing an average of two dollars per box, although some of the finest specimens brought six dollars per box. It is predicted by some who are well informed that the lemon industry will be the most profitable of any of the horticultural enterprises.

The San Diego Land and Town Company built a great dam in the mountains, six miles east of National City, to divert the waters of the Sweetwater River so that they may be used for irrigating purposes. This dam is of solid masonry, and is made of huge rocks quarried on

the spot. It is forty feet thick at its base and three hundred feet long at the top. The dam closes the mouth of Sweetwater Cañon and makes a reservoir that has a capacity of six billion gallons, sufficient to irrigate fifty thousand acres of land. The motor line that passes through National City extends southward through a beautiful country almost to the Mexican line.

City of San Diego.

This is the charming city of San Diego County. Situated on one of the most perfect harbors in the world, with vessels unloading at its wharves from all the chief ports of civilization, the culmination of the Santa Fé Railway system that brings it into intimate relations with Chicago, New York, and Boston; planted on a series of hills that gently slope to the ocean; with a soil that produces almost everything desirable from a pumpkin to an olive; with business blocks which for elegance, solidity, and size are rarely surpassed; with a climate that is enjoyable and healthful both summer and winter; with every facility for boating, fishing, and hunting; with a population noted for culture and refinement; with schools, churches, and hotels that would be creditable to much larger cities; with commercial prospects of dazzling brilliancy—with all these attributes the visitor does not wonder when he finds that every one of San Diego's twenty thousand inhabitants, from the infant just beginning to prattle to the great-grandmother who dozes away the sunny Christmas day in her armchair on the veranda, has learned to sing her praises loud and long. It was here that Father Francis Junipero Serra founded, on the 16th day of July, 1769, the first of the series of missions that he established in California.

The visitor should have a view of the old ruins of this most ancient of California missions. They are on Presidio

Hill, at "Old San Diego," a romantic spot, with its adobe buildings, palm trees, and orange groves.

Five years after the mission was founded here the location was changed to a point about six miles up the San Diego River in a very fertile valley. The ruins of these later buildings are well worth a visit. A drive from San Diego to the Presidio Hill and Old San Diego, then up the valley to the mission, and then to San Diego across the country, is full of delightful surprises.

San Diego was much involved in the war with Mexico. Among the several generals who were in San Diego during 1846 was General Emory, who reported that "the harbor of San Francisco has more water, but that of San Diego has a more uniform climate, better anchorage, and perfect security from winds in any direction."

In 1850 the population of San Diego was six hundred and fifty. The first newspaper—the Herald—made its *debut* under the management of J. Judson Ames, May 29, 1851. It lived eight years, and then from 1859 to 1868 San Diego was without an organ. The San Diego Union then appeared to voice the advantages of the land-locked harbor and the blissful climate.

In 1867 A. E. Horton bought nine hundred acres where San Diego now is, and laid it off in lots and began to boom the place. Mr. Horton is popularly called the father of San Diego. What a typical Western history he could give! How, when Scott promised to build a railroad to San Diego, his property became of great value; then Scott disappointed them and property went away down, so that Horton had to sacrifice block after block of his property, and he was looked upon as a poor, visionary old man. But again out of the rifted clouds the sun shone forth upon San Diego, and the Santa Fé Company came to San Diego with their railroad, and now Mr. Horton, although somewhat advanced in years, has again become rich, and the shrill whistle of the locomotive is

music to his ears. Well may he feel rejoiced as he sits in his hillside home that overlooks city, bay, and Coronado Beach, and watches the city of his faith growing to such astonishing proportions.

The increase in values here was remarkable, and people became wealthy so suddenly that some of them became dizzy. Some amusing stories are told of men who made fortunes in this rapid manner. One man had it announced in a daily paper: "We are glad to learn that Mr. Smithson, one of our most enterprising citizens, has exemplified his usual free-handed generosity by presenting his wife with a magnificent thirty-five-dollar set of diamonds, and his daughter, Eilene, with a ten-dollar diamond ring."

Even the men who were dazzled at their prosperity soon settled down to work in an earnest way for the continuous upbuilding of their city.

The population of the city, by the census of 1890, was 16,159.

San Diego occupies a beautiful and commanding site, on a plateau formed by gently-sloping foothills, on the northeastern shore of one of the finest bays in the world, the only land-locked harbor in California beside that of San Francisco. On the northeast and southeast are mountain peaks. The climate is remarkably equable, with a few cloudy days during the year. The average temperature for January and July, 1892, differed only ten degrees. The average annual rainfall is only ten inches.

It is an astonishment to visitors how a city like San Diego can have been practically created within so short a time. There are nearly two hundred and fifty miles of street (fifty miles graded and five with asphalt pavement), thirty-seven miles of street railroad, including a fine electric system, seventy-five miles of motor road, connecting with the business section, over forty miles of sewer, ten miles of gas mains, and seventy miles of water mains.

There are a dozen hotels, twenty-three churches, four banks, and eight large public schools. The city-park reservation comprises fourteen hundred acres. There is a hundred-thousand-dollar opera house and three other auditoriums. The numerous handsome brick blocks would be creditable to a city three times the size of San Diego. The courthouse is a handsome building which cost two hundred thousand dollars.

San Diego is a port of entry under the United States custom laws. The bay is thirteen miles long, completely land-locked, with six square miles of available anchorage. The total area of the bay is twenty-two square miles, and depth of water over the bar, at low tide, twenty-two feet. About three hundred steam and one hundred and fifty sailing vessels arrived at San Diego during the past year. During a recent year seventy-three thousand tons of coal and thirty-seven million feet of lumber were imported. The coal bunkers of the Spreckles Commercial Company have a capacity of about fifteen thousand tons. A train of twenty-four cars has been loaded here in forty minutes. There are four large commercial wharves. Congress has granted an appropriation for a jetty which will further improve the entrance of the harbor.

The city limits of San Diego extend north as far as Del Mar, a distance of twenty-three miles, embracing a large area of rugged mountain country. There are many interesting spots for tourists to visit within a day's journey, and railroad accommodations are ample.

CHURCHES.

The Roman Catholic, Methodist Episcopal, Protestant Episcopal, Baptist, Presbyterian, South Methodist, and Unitarian churches, all have places of worship.

The San Diego Flume Company have built immense dams in the mountains, thirty-five miles away, at the head

waters of the San Diego River, and have carried this water to San Diego and vicinity. They propose to furnish water to irrigate fifty thousand acres of land.

Every tourist should take the sixteen miles' drive to the monument that marks the boundary between Mexico and California. The lighthouse is also well worth visiting. Thus, with driving, fishing, and boating, the tourist can interest himself; but he will also find that city has pleasant social features, and he should not shut himself up like an oyster if he wishes to enjoy himself.

From San Diego East and North.

From San Diego eastward for twelve miles, rising higher, are the noted table- or mesa-lands, until suddenly a fertile valley of many thousand acres is reached. This valley is *El Cajon*. There are here several thousand acres in raisin grapes and other fruit. The town of Cajon has shops, stores, schoolhouses, churches, and several lines of telephone.

Eighteen miles northeast of El Cajon is *Nuevo*, with schoolhouses, shops, and post office. This is the center of the Santa Maria Valley, which contains about fifteen thousand acres, while between the Santa Maria and El Cajon Valleys is the San Vicente with its four thousand acres. *Ballena* is a pretty little village, with store, post office, and schoolhouse. It is four miles from Nuevo and thirty-five miles from San Diego, and has an elevation of twenty-five hundred feet above sea level. Ten miles northeast of Ballena is the rich Santa Ysabel ranch of eighteen thousand acres.

Fifteen miles farther east is *Julian*, a flourishing mining town. Julian is not only a mining town, but is also the center of a good fruit and agricultural country. It is true, they have snow and frost in this mountain town, and can not raise oranges and lemons, but the vicinity is noted for its apples and pears. Julian is four thousand two hundred

feet above the sea, and for certain classes of lung troubles is doubtless very desirable. It is soon to be connected with San Diego, sixty miles away, by a railroad, and then the whole country will doubtless receive a greatly increased population. Julian now has stores, public hall, blacksmith shops, schoolhouses, quartz mills, and a telephone line to San Diego.

Three miles east of Julian is the mining town of *Banner*, with its quartz mills, schoolhouse, etc. A short distance east of Banner the mountain range is crossed, and the traveler looks down several thousand feet upon that great ocean of sand—the Colorado Desert. This immense barren plain occupies three fifths of the area of San Diego County. It is to this worthless waste that San Diego County is indebted for her incomparable climate.

A few miles north of Julian is Warner's Ranch, consisting of twenty-six thousand six hundred acres of valuable land, formerly owned by the late ex-Governor John G. Downey, of Los Angeles.

Just west of Warner's Ranch is *Mesa Grande*, with its cattle, hogs, bees, and mines. There are in the territory just traversed in coming from San Diego forests, rivers, and mountains, with many picturesque scenes and romantic spots. When the Julian Railroad is completed, it will be a region well worth visiting.

Starting again from San Diego, and going southeast through National City, the National Ranch, the Otay, Janel, and Jamul Valleys are all soon traversed. On, east of them, forty-five miles from San Diego, is *Potrero*, an agricultural village. Fifteen miles farther east, almost on the Mexican frontier, is *Campo*, another agricultural village and trading post. Cattle, horses, hogs, grain, hay, and honey are the chief products. The fact that the honey crop of San Diego County recently amounted to over 2,500,000 pounds gives some idea of the extent of this industry.

Going north from San Diego over the California Southern Railroad, the visitor passes through numerous seaside villages, but the first place of importance is *Del Mar*, a delightful summer resort. The beautiful ocean beach, clean streets, and pretty cottages attract the eye. Del Mar is twenty-three miles from San Diego. Here are bath houses and excellent hotels. The proprietors will not sell a lot except the buyer binds himself to put on improvements of not less than a fixed value. No saloons are permitted, and the class of summer visitors is of the very best.

A few miles east of Del Mar is *Poway*, the center of a rich agricultural and horticultural valley. It has stores, schools, churches, and post offices.

Six miles north of Del Mar is *Encinitas*, another seaside village with flattering prospects. East of this village are the Encinitas and San Dieguito ranches, both large bodies of rich productive land that are being rapidly put under cultivation.

Ten miles east of Encinitas is *Bernardo*, another agricultural center. A village with the usual stores, school-house, and shops.

A short distance north of Encinitas a short branch line runs to Escondido, about twelve miles from the coast.

Escondido is a beautiful town in the center of one of the richest regions in San Diego County. It is starting with a highly-educated class of citizens. In fact, the object is to make this delightful place an educational center. Already the University of Southern California has established a preparatory school here, called the Escondido Seminary.

A few miles farther north is Carlsbad, a seaside resort noted for its mineral waters.

Three miles north of Carlsbad is *Oceanside*, the chief town in San Diego County, not on the bay. Here within a few months has sprung up quite a town. It has its news-

papers, numerous stores, hotels, bath houses, and, in fact, everything a well-regulated watering place should have. The surf-bathing at this place is good.

Here a branch of the California Southern Railroad deflects to the east, extending as far as Fallbrook, and another to Escondido. No visitor to Southern California should fail to stop at Oceanside; not for the surf bathing and invigorating ocean breeze alone—those he can get at Santa Monica, Long Beach, Santa Barbara, and numerous other places—but near Oceanside is the wonderful San Luis Rey Mission. This mission is located at the town of *San Luis Rey*, four miles east of Oceanside. It was established in June, 1798. The population of the town is about six hundred. There are the usual stores, school-house, etc. The town is at the mouth of the San Luis Rey Valley.

North of Oceanside the main line of the Santa Fé Railroad hugs the coast until it reaches San Juan Capistrano.

Nineteen miles north of Oceanside is *Fallbrook*, a mountain station, near which is good agricultural and fruit land. The road formerly ran through the picturesque Temecula Cañon to the station of Temecula, one hundred and twelve miles from Los Angeles and seventy-four miles from San Diego, but it was washed out several times by winter freshets and has not been rebuilt, the connection being made by stage to Perris. Here is an historic section. The reader, who has read Ramona, already knows of Temecula and the beautiful Pala Valley twelve miles inland, where the old Pala Mission stands.

Thus is closed a hasty sketch of this large county. The writer has several times traveled over the county, and has tried to condense and present its most salient points. Liberal use has been made of the valuable works on San Diego County, by Douglass Gunn and T. S. Vandyke, Esq. The San Diego Sun and the San Diego Union have also been frequently quoted.



The Call to Sunrise Mass, Pala Mission.

Climate of San Diego County.

The following, from the Southern California Practitioner for May, 1887, is from the pen of C. M. Fenn, A. M., M. D., a gentleman who has been for many years a practitioner in the city of San Diego:

"Another typical and remarkable salubrious climate is found in the city of San Diego, which, from its position on the eastern shore of our bay, is neither coast nor inland; it includes, however, the desirable qualities of each. Point Loma, one of the most elevated lighthouse promontories of the world, shuts out the sea from a small portion of the city. From sea-level the red granite earth trends eastward with gradual ascent, until it culminates in a plateau one hundred feet in altitude, and extending in all directions. It will be readily inferred that the natural drainage of San Diego can not be excelled. The rainfall of the city is less than in the interior, an average rainy season with us implying about ten inches of water, evenly distributed through the winter and spring months. As in the ancient days and times, when the great temple was building, so here it usually 'rains in the night season only,' and the days pass with genial sun and unclouded skies, as if to give the invalid no reasonable excuse for remaining within doors. For the same reason mud is seldom seen, and then for a brief period, even upon our thoroughfares. For the most part, therefore, there is an absence of the noxious fumes so frequently emanating from filthy streets, and which are often not less deleterious than sewer gas itself. In corroboration of our equable temperature, the Signal-Service records for thirteen years, ending with 1884, show a mean difference between summer and winter of only 12.3°! I have also been favored by the department at Washington with the meteorological data of January and July, 1886. Without quoting in extenso, I find the mean daily range of temperature at San Diego to have been 13° and 11°; mean daily relative humidity, 74° and 77°; highest velocity of prevailing northwest wind, 29 and 19; number of days on which the sun was more or less obscured, by what we might call high fog (?) or vapor, 10 and 2 (I believe the records class those as cloudy days, and write foggy days 0).

"The effect of such atmospheric conditions upon the system will be readily appreciated. The changes between night and day, as well as of the seasons, are so insignificant relatively that the least vitality is not too severely taxed. The day heat, as we have seen, can never be oppressive, and cool nights ever conduce to refreshing slumber.

Mineral Springs of San Diego and Riverside Counties.

San Diego County is very rich in valuable waters, but very poor in authoritative reports. The following has been received from the authorities mentioned.

In response to a request from the writer for information on this subject, Dr. J. F. Escher, a prominent physician of San Diego, says:

"The Bockman Soda Springs are forty-five miles directly east of the city of San Diego, and can be reached by stage and private conveyance: the former every two days as far as Descanso P. O., and the remainder of the distance—twelve miles—by private conveyance. The water is cold, and is strongly impregnated with soda, iron, and carbonic-acid gas. The water resembles that of the Napa Soda Springs.

"The Tia Juana Hot Springs—temperature from 120° to 140°—though not in San Diego County, being directly across the line in Lower California, are tributary to San Diego city, and nearer to the latter than any of the herein-named springs. The water is impregnated with sulphur, arsenic, and other constituents, and has proved very efficacious in the treatment of rheumatism, renal affections, and anemia. The distance is sixteen miles south of San Diego, and can be reached by stage every day. In a short time a steam-motor line will be completed to them, so that they can be reached any hour of the day in a few moments. At present the accommodations are very inadequate, as a year since the buildings were washed away in an unusual freshet.

"The Agua Caliente, on Warner's Ranch, in the Valle de San José, seventy miles northeast of San Diego city and twelve miles north from the Julian mine, can be reached from the latter place by private conveyance, between which place and this city

there is a daily stage. The accommodations are ample, though somewhat rude, the springs being in the possession of the Indians. Temperature of water, 140° , strongly impregnated with sulphur and iron.

"Dr. Winder, of this city, who has visited most of the famous mineral springs of the United States, thinks these springs are not surpassed, if equaled, by any in the land.

"Agua Tibia Spring, also in the vicinity of Julian, is sixty miles from here. Of this spring I can learn literally nothing.

"There is also a mineral spring in the Santa Margarita Ranch, near the C. S. R. R., which has quite a reputation in the cure of rheumatism.

"Carlsbad, north of San Diego, has already been referred to. The waters for which the place is noted are from an artesian well six hundred feet deep. A correspondent of the Los Angeles Daily Times sends the following report:

"I send you the analysis of the Carlsbad water, signed by the State chemist:

	Per gallon.
Free carbonic acid.....	4.99
Sulphate of potassium	13.79
Sodium	19.54
Chloride of sodium	81.48
Sulphate of magnesium.....	0.42
Lime	10.33
Carbonate.....	1.19
Magnesium.....	1.24
Peroxide of iron.....	0.23
Silica.....	1.64
Chemically combined.....	2.37
Water and organic matter.....	2.37
Total.....	132.23

"A spectroscopic examination of the water gave no reaction—lithium, strontium, or barium.

"The water contains no ammonia or nitric acid.

"(Signed)

GEORGE E. COPLEY,

"Assistant State Chemist.

"A light, purgative saline water, with enough of the chalybeate character to impart tonic qualities, and are rendered palatable. A slight impregnation of carbonic-acid gas.

"(Signed)

E. W. HILGARD,

"*State Chemist University of California.*

"Together with this analysis they send an analysis of the celebrated Carlsbad Springs of Germany, and the Kissingen Springs of Bohemia. Every ingredient that is in the one is in the other, with the advantage of the Carlsbad of California in its being about twenty-five per cent stronger. There is not a day that passes but a shipment of the water is made to some place, and but a few days ago nearly a car load was shipped to Boston, Mass. More anon."

The *Temecula Hot Springs* in Riverside County are quite noted. The following, from the Southern California Practitioner for June, 1887, is by Dr. Henry Worthington, of Los Angeles:

"Some twelve years ago, while I was seeking health in the Temecula country, I met one day an old-fashioned Mexican carita drawn by two mules, driven by an Indian boy, and in the bottom of this strange vehicle lay an old man quite unable to move. Out of curiosity I examined this man. He was suffering from chronic rheumatic arthritis of several years' standing, and he had traveled from Lower California (about three hundred miles) to visit the celebrated Temecula Hot Springs. Having become interested in his case, I watched the effects of the waters on him. This was in July, 1874. Three months afterward I was much surprised one day to see this same old fellow drive the carita himself, and I then learned that his rheumatic joints had been quite restored to their normal functions by a three months' course of bathing. Since that time I have known many cases of rheumatic diseases either cured or much relieved by drinking and bathing in these waters.

"These hot springs are situated in the northern part of San Diego County, about three miles from Murietta colony, in the foothills, having an altitude of some twelve hundred feet above the sea level. The waters emerge from the side of low lime hills,

and, filtering through the earth, form a sort of limited cienega or marsh, and collecting at a lower point flow as a small stream until they are lost in the sands of a dry creek.

" The medicinal properties are due to sulphur, iron, and soda salts, as follows:

Bisulphate of potash	Bicarbonate of iron,
Bicarbonate of soda,	Bicarbonate of manganese,
Bicarbonate of potash,	Chloride of sodium,
Bicarbonate of lime,	Free carbonic acid.
Bicarbonate of magnesium,	

" The temperature is about 144° F., hot enough to boil an egg in from five to six minutes. These springs are well known—I may say celebrated—throughout this region, and even into Baja California and Sonora, so that for years they have been the resort of the natives and others. As in the instance of the old man referred to, many have made pilgrimages from great distances.

" The climate of this region is, perhaps, somewhat different from that of any other part of Southern California—in fact, the winters are colder and the summers hotter—the changes more decided; and I am fair to say that, in many cases, this may be a desideratum quite as desirable as the most ideal equability. In the summer season, that is from June to November, one may get extreme dry heat; in the winter extreme dry cold, not the harsh chilliness of the East, but the tempered, bracing cold of a sub-tropical region. So much is said about equable months in these days, that I think this hot spring region is rather unique, in its having a climate hot in summer, withal so dry and bracing, and in winter an exhilarating dry cold, without extreme altitude.

" There are certain pulmonary diseases that require these very climatic elements, and I have seen many cases of lung troubles at once improve upon a removal to this district, after having exhausted, apparently, the climatic benefits of other more popular regions.

" In 1876 I examined H. L. B., a young man of twenty-five—cavity in right apex, extensive adhesions posteriorly—who had tried several other climates, but who was evidently becoming worse monthly. I advised the hot springs country. In November, 1886, the apex had cicatrized, and the fibroid condition at the posterior base I do not consider serious.

" In 1877 I sent a patient to this same region, who was evi-

dently in the third stage of phthisis. After a residence of some four years in this neighborhood, this patient did so well that he returned home to New York, and is still living.

"A case of asthma that had resisted every treatment, making life well-nigh intolerable, has perfect relief when at Temecula.

"A gentleman, who was an intense sufferer from chronic bronchitis and cardiac dilatation, went to the hot springs some fifteen months ago, and got such surcease from his bronchial catarrh that he now has little discomfort from cough or dyspnea.

"A great many cases of rheumatism I know of that have been quite cured by these waters; two intractable cases of urticaria; a severe case of psoriasis rubra, that had resisted arsenic and strychnine; one rather bad case of so-called muscular rheumatism; several cases of cystitis, one my own patient, whom I could not cure by ordinary treatment; a case of chronic cellulitis of the left broad ligament, with successive agonizing attacks of supuration, was relieved by the hot baths, hot vaginal injections, and drinking large quantities of the water, more than by any other treatment; and so on, I could adduce many other cases from my own and others.

"The subjoined table was kindly given me by Dr. A. M. Lawrence, who lives within three miles of the hot springs at Murietta, Riverside County:

Elevation, 1,090 feet; latitude, $33^{\circ} 32' 24''$; longitude, $117^{\circ} 10' W$.

DATE.	Mean temperature.	Highest temperature.	Lowest temperature.	Mean humidity.	Prevailing wind.	Total rainfall.	No. of days on which rain fell.
1885.							
July.....	70.94	105	57	57.38	S. W.	0	0
August.....	75.95	111	58	57.21	"	0.7	1
September.....	67.48	107	45	61.10	"	0	0
October.....	61.15	100	35	63.46	"	0	0
November.....	54.52	80	27	71.04	"	5.15	8
December.....	49.47	80	27	70.59	"	0.74	5
1886.							
January.....	49.49	77	21	78.20	"	10.66	8
February.....	51.00	80	31	72.34	"	0.48	2
March.....	49.87	80.6	30	84.54	"	5.94	8
April.....	54.12	78	34	79.21	"	3.79	4
May.....	6.20	98	44	77.11	"	0	0
June.....	64.95	98	48	76.79	"	0	0

SAN BERNARDINO COUNTY.

This was the largest county in the United States before the segregation of Riverside County, and is still one of the largest. It contained before the segregation 23,472 square miles, making over 15,000,000 acres. In other words, this one county in Southern California was about the size of the States of Connecticut, Delaware, Maryland, and Massachusetts combined. If we add Los Angeles and San Diego Counties to San Bernardino, we have a territory as large as the four States just mentioned and Vermont and New Hampshire combined.

The county is bounded by the counties of Riverside, Orange, Los Angeles, and Kern, the State of Nevada, and the Territory of Arizona. The editor of the *San Bernardino Courier* says:

"The climate and productions are, of course, subtropical, though so varied are the soil and climate that, within the bounds of the great San Bernardino Valley almost every staple indigenous to both the subtropical and temperate zones is produced. Our chief productions are the citrus fruits so precious in commerce: raisin grapes, the various berries, wine grapes, from which great quantities of the best wine made in the State are manufactured, alfalfa clover, the most productive plant of forage, wheat, barley, oats, buckwheat, corn, and potatoes, which yield prodigious quantities to the acre, and general farm and dairy produce.

"Oranges, lemons, pomegranates, limes, figs, quinces—in short, all the subtropical fruits here attain to perfection. Our citrus fruits are the best known in commerce, and beat the world in competition at New Orleans and Chicago. Orange culture is the most profitable use to which land can be put in these latitudes; hence, orange-growing is here a leading industry. It is as fascinating as it is a profitable pursuit; hence every newcomer wants an orange grove. After the eighth year an acre in oranges may be safely relied upon to give a net profit of five hundred dollars. Other citrus fruits are generally, if not quite, as profitable,

though the orange is, on the whole, more certain. The crop ripens in December. An orange grove in bloom in the middle of January—the trees densely, darkly green, with their golden fruit standing out in contrasted relief, while the bridal blossoms, so dear to poetry, peep out in radiant purity—is one of the most beautiful and fascinating sights in Nature. What the climate is can be realized from a knowledge of the facts above given.

“ Our raisins have a national reputation for superiority, and command the highest prices in the California and Eastern markets.

“ The productions of the temperate zone are yielded in prodigal profusion. Our mesas give fine crops of wheat of superb quality. Barley and other small grains yield largely, while we have some of the richest corn land in the world.

“ Potatoes, beets, cabbages, turnips, beans, sweet potatoes, and garden stuff thrive most luxuriantly. In many sections of the valley Irish potatoes can be had fresh from the ground every month in the year. Garden stuff is perennial. So are strawberries. So is alfalfa clover, which yields from ten to fourteen tons of splendid hay annually to the acre. In midwinter we have string beans, fresh tomatoes, ‘ new ’ Irish potatoes, green peas, green garden stuff, and the finest citrus fruits in the world on our tables daily. Strawberries fresh from the vine were peddled in San Bernardino all winter. Grapes from the vine were to be had in the middle of January in the sections around the foothills. Farming, in the Eastern sense, is followed by few. The farmer here, as a rule, is, more properly speaking, a horticulturist. He grows potatoes, wheat, barley, corn, beets, alfalfa—two, three, or perhaps all of them—for the use of his table and his stock, but generally depends upon the sale of his fruit for his annual income. Of course, he grows his own apples, peaches, pears, and grapes. Good apples, delicious peaches, and perfect pears are produced in the San Bernardino Valley; and all of these command a profitable market. There are a few great grain ranches in the valley. Where water for irrigation is available, land which will here give good wheat is altogether too valuable for the cultivation of the citrus fruit to be ‘ wasted in wheat-growing,’ as the farmers say.”

A large portion of the county is mountainous and desert, but the mountains are rich in minerals, and the

deserts lack only water to be fertile. As the other lands become occupied, the writer fully believes means will be at hand for irrigating these barren wastes. The soil is excellent, and in the near future water from artesian wells, tunnels, or mountain reservoirs will doubtless be developed.

City of San Bernardino.

This is one of the chief cities in Southern California. It was originally a Joe Smith Mormon town, and was planned after Salt Lake City. The town is well laid out, and that is about all that the San Bernardino people need to thank the Mormons for. So long as the Mormons were in control, the city developed slowly. The Mormon yoke was long since thrown off, and Catholic and Protestant bells ring out a new era of progress and prosperity.

The altitude of San Bernardino is ten hundred and seventy-three feet. It is in a fertile basin, and the visitor is at once captivated by its numerous beautiful homes and rich orchards. With the development of water power in the mountains San Bernardino is destined to become a manufacturing place of considerable importance.

San Bernardino and its vicinity is composed of successive avenues of homes. A fruit-growing community must necessarily mean a community of many homes. "Ten acres enough" can well be said here. The outside of a home usually indicates the character of the people inside. Orange culture naturally develops the finer qualities of humanity to a higher plane than that of corn- and hog-raising.

Visitors will find fruit-growers, as a rule, people who love the good and the beautiful. They are educated, and believe in the education of their children. It seems as though it would be an impossibility for a family to grow up here, under the shadow of Mount San Bernardino, where an ordinary drive leads to mountain cañons and

waterfalls, surrounded by flowers and ferns, where their chief occupation is among shapely trees and fragrant blossoms, cultivating and gathering and packing the rosy-cheeked apricot, the delicate-skinned nectarine, and the golden orange, without having developed within them the finer sensibilities and higher attributes of mankind.

Abundance of fruit means abundance of water. San Bernardino has in its immediate vicinity over four hundred artesian wells. These never-failing fountains, bursting forth from their earthly bounds, present a novel picture.

The population of San Bernardino is about nine thousand. There are excellent public and private schools, and the usual complement of churches and secret societies.

There are several hotels. The city is on the California Southern and California Central Railways, and a branch line makes trips every few minutes to the Southern Pacific Railroad, at Colton, three miles away.

Other lines of railroad run to Highlands and Redlands, so that San Bernardino is an important railroad center. Trains leave frequently for Los Angeles, three times daily for San Diego, and twice a day for Kansas City, Chicago, and New York.

There are numerous substantial brick business blocks. The climate of the city of San Bernardino is very pleasant in winter, but its summers are rather warm. Not so but people can live, do business, and enjoy life, but the fact that the ocean at Santa Monica is only about seventy miles away induces many to spend a few weeks where they can be fanned by the ocean's breath.

San Bernardino will ultimately be a large city. The writer of these lines has had ample opportunity to study the situation and channels of trade in Southern California, and he has no hesitancy in predicting that San Bernardino is destined to be a solid commercial city. To the east is

the San Gorgonio Pass, with San Bernardino Peak twelve thousand feet high on one side, and San Jacinto Peak eleven thousand feet high on the other side, through which the Southern Pacific Railroad enters California, while a few miles to the north is El Cajon Pass, through which the Atchison, Topeka, and Santa Fé reaches the Pacific coast.

The reader will probably note throughout this book the great proportion of physicians mentioned who have come to Southern California pronounced consumptives or asthmatics. Their testimony is freely quoted, because they are the most careful and competent observers.

Other towns in San Bernardino County are Barstow, Calico, Daggett, Ontario, and Rialto.

Barstow is a mining and railroad town eighty miles north of the city of San Bernardino. It is in what is known as the desert. It looks bleak and desolate, but there is an excellent hotel, and two or three days can be pleasantly spent here visiting the mines, collecting minerals and other curious rocks. The atmosphere is very dry, and cases of phthisis where there is no tendency to bleeding of the lungs would probably derive benefit from a brief visit here. Any lengthened visit would result in *ennui*. Barstow is a capital place to get a good idea of life on the desert.

Nine miles east of Barstow is *Daggett*, another mining village, where there are immense beds of salt, while seven miles north of Daggett is—

Calico, the mining center of Southern California. The silver mines of this section have been a great source of wealth, and still employ a large number of men. It is estimated that the output from these mines has been two million of dollars in bullion annually. The nearest station to Calico is Daggett.

Now, the reader will in his mind leave the arid desert, come on the Santa Fé road through Hesperia—through

El Cajon Pass back to San Bernardino, then west ten miles on the California Central Railroad to—

Etiwanda.—This is a collection of homes and orchards. A charming place! Although Etiwanda is not ambitious to become a great town, yet they have centrally located one of the best public-school houses in San Bernardino County. Etiwanda ships large quantities of raisin grapes.

At *North Cucamonga* are many flourishing vineyards.

A few miles farther west on the California Central is—

North Ontario, a prosperous and progressive young town. South of this point, two miles on the Southern Pacific Railroad, is—

Ontario, probably the most artistically developed place in Southern California. From this station to the base of the mountains, seven miles away, extends an avenue two hundred feet wide, lined on each side with pepper trees, eucalyptus, magnolia, orange, and palm trees, with an electric railroad.

Setting back a short distance from the avenue are elegant villas surrounded by lawns, orchards, and flower-gardens. The beauty of this scene can be best comprehended when it is known that the altitude at the station is fourteen hundred feet, while at the end of the avenue, at the base of the mountain, the altitude is twenty-one hundred feet. Thus it is to the tourist on the Southern Pacific train like a picture hung on a wall. Just think of an avenue seven miles long, with trees, gardens, lawns, and elegant houses for a picture, and a mountain for the wall upon which the picture is hung!

At the Southern Pacific station, Ontario proper, there is an excellent hotel, stores, newspaper, and several church organizations. There are no saloons at Ontario. The people are liberally educated and refined. Besides the excellent public schools, there is a large, substantial structure—the Chaffee School of Agriculture of the University of Southern California.

Ontario is a choice resort for invalids. From Ontario to Colton, on the Southern Pacific, is nineteen miles east.

Rialto, the first station on the Southern California Railway west of San Bernardino, is an extensive fruit-growing settlement where a large area of orange groves have been planted. There is a business street, also a hotel.

Colton is situated at the crossing of the Southern Pacific and the California Southern Railroads. It is fifty-eight miles east of Los Angeles and three miles south of San Bernardino. From thirty to fifty trains pass through Colton daily. Almost all kinds of fruit are profitably raised here.

The Colton Packing Company has a mammoth cannerly here, and employs several hundred persons during the season. The capacity is fifteen hundred three-pound cans of fruit per day. Brickkilns, limekilns, lumber yards, and stone yards do an extensive business. There are in Colton good hotels, schools, churches, and the usual number of fraternities.

As to the climate of Colton, the following interesting information from the pen of Dr. G. L. Hutchinson, a practitioner in Colton, who came to Southern California several years ago on account of rapidly-developing disease of the lungs, is valuable: *

"While Los Angeles is usually the objective point for tourists from the East, those coming by the two southern routes pass a point that experience is demonstrating possesses peculiar advantages for the health seeker.

"Colton is a town of about fifteen hundred inhabitants, located sixty miles from the coast, near the center of the beautiful San Bernardino Valley, and at the junction of two of the great transcontinental railroads, the Atlantic and Pacific and the Southern Pacific. About twenty miles distant can be seen the snow-

* Southern California Practitioner, p. 42, February, 1887.

capped peaks of the highest mountains in Southern California, while down in the valley are some of the finest orange groves in the State.

"A large portion of the town is built upon a broad, sandy slope or 'wash,' which seems to be the bed of a mountain stream that was long ago diverted to other channels. It is about half a mile from and seventy feet above the Santa Ana River. If a dry, porous soil is desirable, here it is. The well digger goes down seventy feet for water, fifty feet of which is through dry sand and gravel. With slight modifications, the relation between elevation above sea level and temperature holds good in Southern California as elsewhere. Colton has an elevation of about one thousand feet; slight frosts sometimes occur, but not enough to injure orange or lemon trees. Fog is rare; when it occurs it is only at night, and is so thin that it disappears with the first rays of the morning sun. Protected by some low mountains to the southwest, the heavy sea fog drifts by to the north and south, and rolls up in fleecy masses against the mountains several miles away.

Lying out in the valley several miles from the mountains, the cold winds which rush out of the cañons and through the passes subside in the warm air of the valley, like turbid streams flowing into a placid lake, and one often hears the remark made by visitors who are spending the winter nearer the mountains, 'How still it is here in Colton!' This does not apply to the northers, for the highest mountains and the deepest valleys can only afford partial protection from them.

"A large proportion of the rain falls upon the mountains; many days in succession the mountains will be shrouded with dark storm clouds, while out in the valley is unbroken sunshine. There is during a part of the year a sudden fall of temperature at sunset, ranging from fifteen to thirty degrees. Theoretically, this has been considered unfavorable for phthisical patients; but with the important elements of elevation, dry air and soil, it is practically the reverse.

"Pure water is at all times of the greatest importance, and especially in a warm climate. Heretofore water has been supplied by deep wells, but now water is brought in iron pipes, from artesian wells several miles away.

"Six miles south of Colton is Riverside, and three miles north

San Bernardino; with these cities we are closely connected by steam and horse cars, and while we have many of the advantages, we escape the dangers incidental to a dense population.

"Of the advantages of Colton as a winter home for invalids there can be no question.

"Its freedom from fog, rain, and wind; its elevation and pure water; its remarkably dry soil and air; conditions which, taken together, are almost the antithesis of those which develop phthisis.

"Its proximity to neighboring cities and the mountains by several lines of railroad, give it peculiar advantages. During the summer months the thermometer ranges at midday from 90° to 115°. During the day there is a strong sea breeze, but the nights are still and cool. To one who has not seen the fact demonstrated it is incredible that such a burning heat could be either grateful or beneficial; but, in this dry heat, where the functions of the skin are at their maximum, and the heat-producing forces of the body at a minimum, phthisical patients often do well, and it seems that at this season, more than any other, the alterative influence of climate is most marked.

"Invalids with almost any disease, especially rheumatism and phthisis, do well at Colton throughout the year; but those suffering from diseases of the nose, pharynx, or larynx, characterized by scanty secretion, find the winters very pleasant, but the summer the reverse, and should not remain here during the heated term."

Hesperia Valley consists of thirty-three thousand acres of land—a siliceous loam—twenty-five miles north of San Bernardino, along the line of the Atchison, Topeka, and Santa Fé Railway. The altitude of this valley is three thousand feet above sea level. Its climate is especially adapted to persons suffering from asthma and bronchitis. The raisin grape does well here.

At Victor, beyond Hesperia, a great enterprise is on foot for the irrigation of an immense tract of land by damming the Mojave River.

East San Bernardino Valley.

The tourist who visits the city of San Bernardino will want to take a trip over the small loop of the Southern California Railway's "kite-shaped track" through the East San Bernardino Valley.

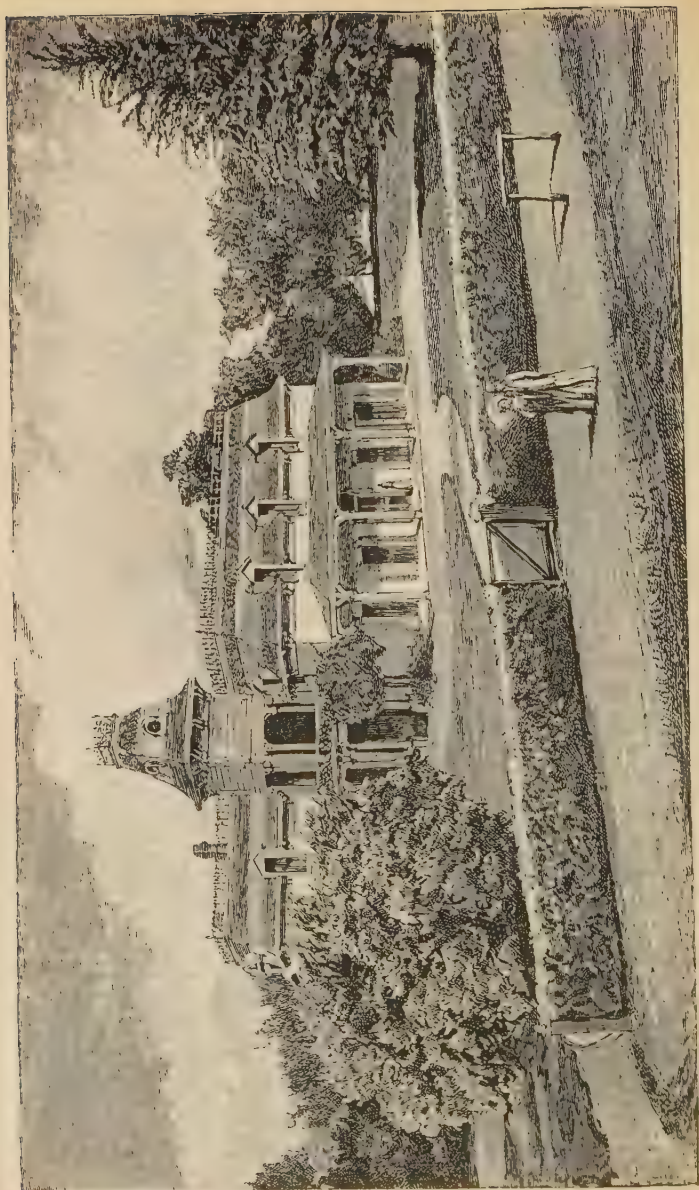
First, there is for four or five miles that is known as Old San Bernardino—one continuous panorama of beautiful homes and rich orchards. The one the illustration represents is typical—neither better nor worse than the average. This is the home of Mr. Frank Hinckley, in Old San Bernardino, four miles from the city of San Bernardino. The hedge that is in front of the house is entirely of roses. There are over two hundred varieties, and there is never a day in the year but some portion of this California fence is in bloom. Here are lime, lemon, and orange trees loaded with fruit, and the tourist will find Mr. Hinckley ready to show all of these semi-tropic treasures in a hospitable manner.

Driving on east, one soon reaches the ruins of the San Bernardino Mission, that was founded in 1820. Now higher ground is reached; and here is seen a picture of elegant houses and young orchards.

This is a new community. Here is a soil of surpassing richness, a climate that is of great benefit to the invalid, and a people of wonderful enterprise. Soon after driving through a roadway between two lines of palms a prosperous town is reached. This is the town of—

Redlands, seven miles east of the city of San Bernardino. Here the orange tree bids fair to reach the acme of productiveness. People of wealth are rapidly coming here and building homes where they desire to spend the balance of their days away from the trials and dangers of the winter cold or the summer heat of the Atlantic coast.

The growth of Redlands has been entirely since 1887.



Residence at Old San Bernardino.

It was incorporated in November, 1888, there being 283 voters. At the election in November, 1890, there were 367 ballots cast. There are 780 names of electors on the great register issued last fall.

Redlands has a fine water supply, which, in addition to its irrigation service, is being utilized to furnish electric power. The soil and climate are perfectly adapted to citrus culture, and Redlands oranges take first rank. There are already over thirty-five hundred acres of orange groves in the district.

Redlands has a most commanding and attractive location. Its citizens are full of energy, and visitors can scarcely credit the statement that all the solid improvements they see are the work of five short years. The city has paved streets, a sewer and storm-water system, two street railways, a thirty-thousand-dollar school building, twelve church organizations, two newspapers (one daily), three banks, an opera house, excellent hotels, and a number of handsome brick blocks.

Redlands is reached by three railroads—the “kite-shaped track” of the Southern California Railway, the Southern Pacific, and a motor line.

Judging from what has been accomplished during the past five years, he would be a bold man who would set a limit to the possible growth of Redlands between now and the end of the decade.

One half mile north of Redlands is—

Lugonia, a flourishing new town. In both of these places there are banks, churches, schoolhouses, hotels, etc. *Mentone* is charmingly located three miles east of Redlands, at the extreme upper end of the valley. North of *Lugonia* three miles is the section of country known as the Highlands, right up at the base of the mountain—a section of the country which is to San Bernardino what the Monrovia and Sierra Madre country are to Los Angeles. Highlands is also an excellent fruit country. The

altitude is from fifteen hundred to two thousand feet. There is a State Insane Asylum here.

From here is but a short drive to Arrowhead Springs, where there was an excellent hotel, recently destroyed by fire. After getting a good lunch the tourist should drive back to San Bernardino by way of the Rabel and Harlem Hot Springs. Nowhere in Southern California can a day be spent more pleasantly than in taking this drive. Motor lines will soon be completed to all of these places, but even then it will be pleasanter to make this round in a carriage with a driver who is posted. If a longer drive is desired,

Crafton, a few miles east of Redlands, will be found a romantic spot, well worthy a visit.

Away up in the mountains, thirty miles northeast of San Bernardino, at an elevation above sea level of sixty-four hundred feet, is an artificial lake five miles long, that contains ten billion gallons of water. This is the Bear Valley Reservoir. The dam that retains this great body of water is of solid masonry, three hundred feet long and sixty feet high. It is twenty feet through at the bottom and three feet in width at the top. Sixteen hundred barrels of cement were used in the construction of the dam. It was all hauled one hundred miles. A four-horse team hauled eight barrels of cement, and was ten days in making the round trip.

An inch of water is the quantity that will flow through a hole an inch square in the side of a box four inches below the surface of the water in the box. Fourteen thousand gallons will flow through this opening in twenty-four hours; consequently a head of water for twenty-four hours gives fourteen hundred thousand gallons. The fact that this reservoir furnishes a continuous stream of six thousand inches during the irrigating season, gives an idea of the large body of land this reservoir will irrigate.

San Bernardino County's water supply for irrigating

purposes is tersely outlined in the following, from the San Bernardino Daily Times. Other sources of supply have since been developed:

"The Santa Ana River, where it comes out from the mountains, furnishes water for the North and South Fork ditches. The North Fork ditch furnishes water for Highlands and the Cram Settlement. The South Fork ditch supplies water for Lugonia, Brookside, and Redlands.

"Mill Creek comes down from the mountains a few miles southeast of the Santa Ana River, and furnishes water for Crafton and Old San Bernardino.

"A stream running down from the south slope of San Bernardino Mountain furnishes water for Banning.

"City Creek, west of the Santa Ana River, furnishes water for a portion of Highlands.

"The stream from Devil's Cañon supplies water for a portion of the Muscupiabe Rancho.

"Lytle Creek, coming down from Old Baldy, west of Cajon Pass, irrigates Mount Vernon and vicinity.

"Etiwanda Cañon irrigates the settlement by that name.

"Another small stream furnishes water for Hermosa.

"Cucamonga is irrigated by a stream fed by springs that rise just north of that settlement.

"Cucamonga Cañon irrigates the Iowa tract.

"San Antonio Cañon, on the line between Los Angeles and San Bernardino Counties, is equally divided between Ontario on the San Bernardino side, and Pomona and other lands on the Los Angeles side.

"San Bernardino is situated in the midst of moist lands where artesian wells can be had anywhere by going to a moderate depth.

"Warm Creek rises from springs in the main valley, away from any mountains. This creek flows into the Santa Ana River, east of Colton, and unites with the waters of that stream that rise within a few miles of the junction.

"The Meeks and Daley ditch is taken from Warm Creek, and irrigates a section of country below Colton.

"The Santa Ana River, in ordinary seasons, is dry for many miles below, where all the water is taken out to supply North and South Fork ditches. The waters of Warm Creek and other

smaller tributaries, however, furnish a good stream again, which is taken out by the two Riverside canals to irrigate Riverside. In dry seasons these two canals take all the surface water out of the river at these points, leaving the underflow to come to the surface below; but Spring Brook, which rises just northward of Riverside, replenishes the stream again.

"The Jurupa ditch is taken out of the Santa Ana River, that irrigates West Riverside.

"The Yorba Settlement, including the property of the South Riverside Vineyard Company, located on the Santa Ana River, sixteen miles below Riverside, again takes all the surface water out of the river for that settlement, but other streams coming in from the north side of the river make a good stream that goes down to supply irrigation water for settlements in Los Angeles County.

"One of these feeders is a short stream that comes from a single spring that, summer and winter, furnishes two hundred and fifty inches of water that runs a gristmill within a mile of the spring.

"There are other small, natural water supplies, but we have enumerated the principal ones in this county.

"A stream of water for irrigation purposes in this valley is considered well worth one thousand dollars an inch, measured in an ordinary midsummer, and some water rights are selling at a higher figure. Hence every small stream that can be utilized is made valuable. The value of water is, of course, dependent, to a certain extent, on its location, for a small stream that will develop a small settlement is not so valuable per inch as a large stream that will make possible a larger settlement.

"About all the natural supplies of water having been utilized, people have turned their attention to the development of water. This is done in three ways:

"1st. Artesian wells.

"2d. Tunnels.

"3d. Reservoirs.

"There are artesian belts where flowing wells can be readily and cheaply obtained. The artesian belt in this valley is now pretty well defined, and outside of this belt experiments are made at great risk. Usually, flowing water is obtained in moist and semi-moist land, and very rarely on the high mesa lands. Tun-

nels are being used now to save the underflow of mountain streams. Two are now in process of construction in this county. Judson & Brown have one in the bed of the Santa Ana River, below where the water is taken out of the stream to supply the North and South Fork ditches.

"The Ontario Land Company have driven a tunnel in under San Antonio Creek a distance of nearly eighteen hundred feet, at a cost of about fifty-two thousand dollars, and they have about two hundred and fifty inches of water, worth a quarter of a million of dollars.

"There are scores of places in the county where tunnels can be run in under the beds of streams, where they come out of the cañons upon the plains, and the underflow saved for irrigation purposes.

"The first attempt at a storage reservoir in this county was made by Judson & Brown at Redlands. This reservoir has never been completed as at first planned, but it is now used as a distributing reservoir only. When completed it will hold winter water enough to irrigate several hundred acres of land. M. H. Crafts next commenced a storage reservoir for Crafton, which is a great aid to the irrigating system of that settlement.

"In addition to these is the Bear Valley Reservoir, the largest irrigation reservoir in the State, which has been described."

Mineral Springs of San Bernardino and Riverside Counties.

There are at least one thousand hot springs in this county, and to see, as the writer of these lines has, hundreds of thousands of gallons of this hot water, "Like a hell-broth," boil and bubble up out of the earth, makes one feel as though this crust upon which he tarries is but a great witches' caldron. Every tourist should stop at San Bernardino and visit some of these springs.

The most noted of them all are the *Arrowhead Hot Springs*, and the following note * from Prof. John Dickenson, A. M., gives an excellent idea of them:

* Southern California Practitioner, September, 1887.

"About six miles north of the city of San Bernardino, on the face of the mountain wall overlooking the valley of the same name, may be seen clearly outlined against its background of desert vegetation, the figure of a colossal arrowhead, about a quarter of a mile in length, its point directed toward the mouth of the sub-jacent cañon, in which burst forth the springs of hot mineral water, which give, in addition to the climatic charms of the region, its reputation to the locality as a health resort.

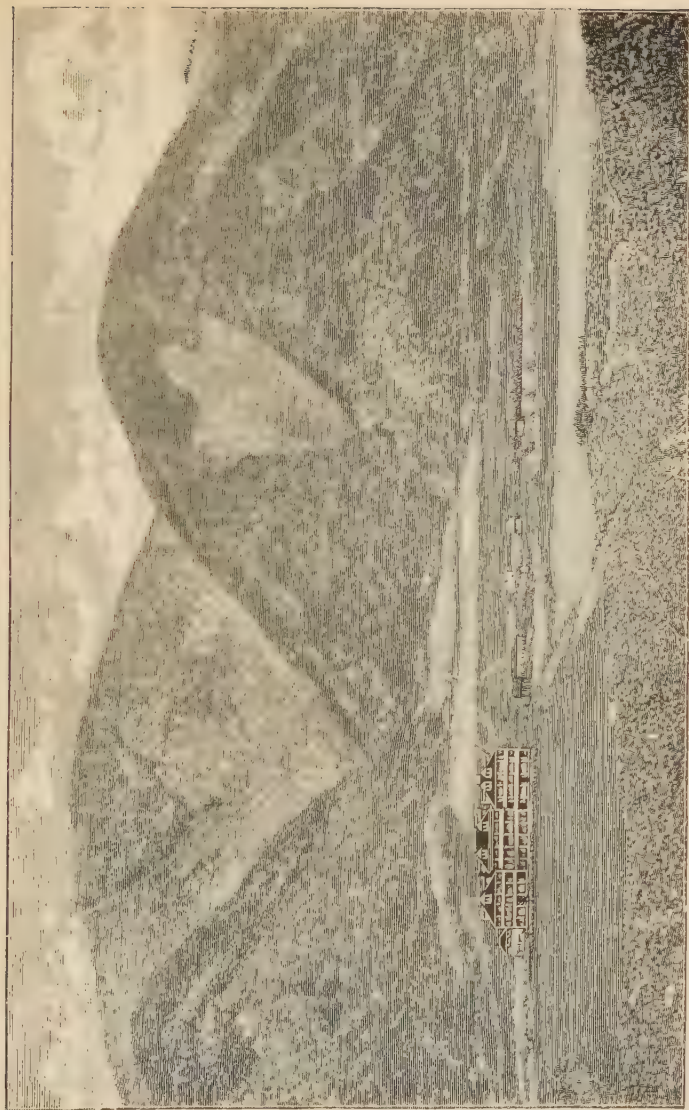
"The Arrowhead Springs lie at the southern foot of the San Bernardino Mountains—a continuation eastward of the Sierra Madre—in the midst of a region of metamorphic rock—gneiss, mica-schist, feldspathic syenite, etc.—the decomposition or chemical action of which seems to furnish not only the heat that almost boils the water, but the mineral substances held in solution therein. Hot mineral springs are found all along the base of the above-mentioned mountain wall, but the point where the chemico-thermal activity seems to be the greatest is at the locality indicated above. Here there are about twenty-five springs within a small compass, the temperature ranging from 140° to 193° Fahr., the solid constituents being, according to an analysis made by Prof. Hilgard, of the University of California, as follows:

Analysis.

Temperature of water, 193° Fahr.

Sulphate of potash, grains per gallon.....	4.001
Sulphate of soda, " " "	42.476
Chloride of sodium, " " "	8.178
Lithium.....	Strong test.
Sulphate of lime, grains per gallon.....	1.343
Carbonate of lime, " " "	1.343
Barium.....	A faint test.
Free sulphureted hydrogen, cubic inches per gal...	644
Strontium.....	Well marked.
Sulphate of magnesia.....	1.46
Carbonate of magnesia.....	321
Silica.....	4.942
Organic matter.....	Trace.

Total solid contents..... 62.984



Arrowhead Hot Springs Hotel, San Bernardino County.
(Recently burned, but now rebuilding.)

"The ground in some places around the springs is saturated with the hot mineral water to such an extent that it is used in giving the so-called 'mud-baths,' the patient lying in a suitably-constructed box filled with the hot mud, in which his person is immersed for a suitable length of time. The springs are much resorted to by persons suffering from rheumatism, skin disorders, blood poisoning, etc., and the waters are used freely both for drinking and for bathing.

"The comfort and pleasure of the sojourner at the springs are greatly enhanced by the charms of climate and scenery. The large and well-appointed new hotel stands at a height of two thousand feet above the sea and one thousand feet above the city and valley of San Bernardino, on a little plateau, between two branches of the cañon, which opens into the valley just below.

"The eye ranges southward and westward over San Bernardino, Colton, and Riverside, over the intervening hills to the distant Santa Ana Mountains, and eastward beyond San Gorgonio and San Jacinto toward the desert. The view is one of rare beauty and grandeur. The air is dry and bracing."

These springs were formerly called San Bernardino Hot Springs. W. P. Blake,* geologist of the United States survey, who visited this vicinity between the 3d and 6th of November, 1853, describes the continuation of this series of springs, at a point lower down, as follows:

"The warm and hot waters gush out from the granitic rocks on the flanks of San Bernardino and adjacent heights. In one place the springs are so numerous, and the water rises in such a volume, that a good-sized mill stream of hot water is formed, which flows down into the valley, and is one of the principal tributaries of the Santa Ana River. This brook of hot water retains a temperature of 100° Fahr. three or four miles from its source.

"I visited several of the springs on the sides of the Sierra, between San Bernardino Mountain and the Cajon Pass, near the saw-mill road. It was evident that the adjacent granite was very

* Mineral Springs of the United States and Canada, Geo. E. Walton, M. D. D. Appleton & Co., New York, 1886.

near the surface, as shown by one or two outcrops, from one of which the hot water issued. Small springs rise at intervals of ten or twenty feet along a distance of thirty or forty rods. Their waters unite and form a little stream that empties into the brook a short distance below. The banks of the stream were thickly overgrown with grass. A dense mass of beautiful green coniferæ grew from the bottom and sides of the channel, and floated in rich waving masses in the hot water. In the immediate vicinity of the springs, however, no vegetable growth was visible. The rocks and gravel in contact with the water were covered with a snow-white incrustation, and little twigs and leaves that had fallen into it were softened to a white, pulpy mass, and were partly incrustated. This was also the case with insects that were lying dead in the shallows of one of the springs, but I could not observe that in either case any petrification or internal deposit of mineral matter had taken place. The following temperatures were observed: 172°, 169°, 166°, 130°, 128°, 108° Fahr.

"The white crust was not found in equal quantities at all the springs. It appeared to be most abundant at one of them. . . . An analysis of the crust (by J. D. Easter, Ph. D.) since the return of the expedition gave the following results:

"The aqueous extract contained only a small proportion of chloride of sodium. In hot hydrochloric acid the mass dissolved with strong effervescence, leaving a residue of silica and alumina. The solution contained—

"Lime (carbonate), chief constituent.

"Silica (soluble in acid).

"Magnesia.

"Alumina and oxide of iron, traces.

"Phosphoric acid, trace.

"The springs are estimated to be at least five hundred feet above the level of the Santa Ana, at the Mormon settlement, and thus nearly sixteen hundred and eighteen feet above the sea.

"These springs are not the source of the large stream of water first referred to. It takes its rise farther eastward, near the mountain of San Bernardino. I regret that I could not visit its source, as the springs must be of great volume and high temperature to send forth such a large stream of water retaining its temperature a long distance from the mountains. I was informed there are several other localities of hot springs along these mountains, and

there are, no doubt, many that have not yet been discovered. The large stream of hot water appears to be nearly pure."

I am indebted for the following information to Dr. J. W. Hazlett, formerly of Philadelphia:

"Just east of the Arrowhead Springs, about half a mile distant and at a little lower elevation, there are quite a number of valuable springs, in every respect similar to the Arrowhead, situated on a ranch owned by Mr. Harrison. I have understood that he accommodates a few private boarders at times.

"West of the Arrowhead Springs, at about the same elevation, there are several other hot springs, of about the same composition, situated on Governor Waterman's homestead ranch. Still nearer the center of San Bernardino, about three or four miles distant, there are several mineral springs, both hot and cold, one set known as the Rabels Hot Springs, about three miles distant, and reached by street cars on Base Line Street. The other, the Harlem Hot Springs, are about one mile farther east on Base Line Street, formerly known as the Warm Creek Springs, because they are the origin of quite a large stream by that name, which flows through the valley and empties into Lytle Creek. There is connected with these last two, as also with the Arrowhead, large basins of lukewarm water for still-water swimming and bathing, largely enjoyed by the young people of this vicinity. The accommodations at these springs are moderately good. There are several fine hot mineral springs in Lytle Creek Cañon near the Glenn Mountain Ranch home, about ten or fifteen miles from San Bernardino. The waters contain large quantities of iron and sulphur. There is a comfortable bath house and tub at the springs, but no boarding place nearer than Glenn's, two miles distant at least, and can only be reached by private conveyance. The Temescal Hot Springs, formerly owned by Major Thorn-dyke, are situated about twenty miles from San Bernardino and ten miles from Riverside, along the foothills on the northeast side of the Temescal Range. They can be reached only by private conveyance. The temperature of the waters ranges from 86° to 112° or more, varying at times. It contains about the usual minerals. Probably the best hot mineral spring in San Bernardino County is the one known as the 'Agua Caliente,' situated

in the foothills on the northeast side of the San Jacinto Mountain, between eighty and one hundred miles from San Bernardino, and about seven miles from the Seven Palms station on the Southern Pacific Railroad. A stage makes daily trips from the station to the springs, where one can find good accommodations. The waters of these springs have always been considered by old residents as possessing peculiar virtues in rheumatism and skin affections, especially specific forms. I have never heard of any reliable analysis of the waters having been made, but have examined several specimens at different times myself, and found them to contain very large proportions of sulphur and iron, and I believe some special forms of soda, such as borax. Away up in the Santa Ana Cañon, on the ranch belonging to Charles Lewis, better known as 'French Louis,' there is a fine cold-water mineral spring, the ingredients being principally iron salts. This spring is about forty miles from San Bernardino. The hotel accommodations consist of four log cabins and several tents. They are not first-class with respect to lodging, but good, healthy food is abundant. Plenty of sport in trout fishing and hunting. The elevation here is nearly five thousand feet above the sea level.

"In Bear Valley there are several hot and cold mineral springs that are said to be very abundant in mineral salts. These are about sixty miles distant from San Bernardino, at an elevation of six thousand feet. There are no hotel accommodations. East of Bear Valley, in the 'Twenty-nine Palms district,' there are several more mineral springs, which are chiefly cold.

"Here in the middle of a vast sand desert is one of the finest cold-water springs I have ever had the good fortune to see and taste. It is a cavern spring, the water dripping from the roof of the tunnel into a basin dug out of the clay, about three feet from the floor. It is as cold as any natural water I ever tasted. The temperature outside the tunnel frequently reaches 120°. There are a few other mineral springs situated in the Mojave River region, distant about forty miles from San Bernardino, the names of which I am not familiar with."

RIVERSIDE COUNTY.

Riverside, the youngest of the counties of Southern California, was created in 1893 from portions of San Bernardino and San Diego Counties. It has an area of about seven thousand square miles.

The tourist coming from San Diego will be well repaid if he gets off the California Southern at Temecula, and goes by team twelve miles inland to the Pala Mission. There is a comfortable hotel, and abundance of good food. Mrs. Jackson spent three months at the various Indian villages in this vicinity. A pilgrimage to these shrines, where this gifted author worshiped, will be long remembered.

Five miles farther on is the pretty town of *Murrieta*. There is an excellent hotel, and the visitor to these Indian villages would do well to make his headquarters here. Charges for board and livery are reasonable, and the details in regard to the location of the Indian villages can be learned from the landlord.

Three miles east of Murrieta are the Temecula hot springs, a detailed description of which is given in the chapter on mineral waters of San Diego County.

Four miles north of Murrieta is romantic *Wildomar*, with its neat homes, green lawns, and brilliant flowers.

The next place, and one of much note, is *Elsinore*, situated on the lake of that name, at an altitude of twelve hundred feet. This place is just midway between Los Angeles and San Diego, and the quail and wild waterfowl make it a choice place for sportsmen to congregate. There are numerous small boats and a small steamer on the lake. A variety of clay is found here especially adapted to the manufacture of the pottery for which Elsinore has become noted. Here is also one of the best coal mines in Southern California. There are numerous hot and cold mineral springs in this vicinity. There are several rich

gold and silver mines near Elsinore. Mineral paint and asbestos are also found here in considerable bodies. Take it all in all, there is probably no place in San Diego County that has more flattering prospects of future development than Elsinore.

Ten miles northeast of Elsinore is the San Jacinto Valley, fifteen miles wide and thirty miles long. This valley is attracting many settlers. Everything in the way of deciduous fruits and grain is profitably produced here. The average elevation is about fourteen hundred feet. There are mountain streams for irrigation, and also more than forty artesian wells that furnish abundance of water. On the mountains east of the valley are large forests of pine, hemlock, and tamarack, from which lumber in quantities is manufactured.

San Jacinto, on the California Southern Railway, is the chief town of this valley. It has a population of nearly two thousand. There are brick blocks, brick school-houses, brick churches, and many other indications of a substantial growth. The place is probably the nearest self-supporting of any in the county. It has its own limekilns, manufactures its own lumber and brick, and produces almost everything that man's physical needs demand, even to sugar, for which honey furnishes an agreeable substitute. The train from Perris, eighteen miles away, on the California Southern Railroad, brings a daily mail.

The Hernet Valley reservoir, twenty-five miles south-east of San Jacinto, at an elevation of forty-five hundred feet, is one of the great reservoirs of the world and well worth a visit.

Pinacate and *Rock House* are both flourishing villages in the western part of the San Jacinto Valley, with the usual village accessories.

Perris Valley is the largest of the interior valleys of Southern California, comprising, with tributary valleys,

a total of nearly one hundred thousand acres of fine level land, having an average altitude of fifteen hundred feet. It is a great grain country, and orchards are being planted. In sheltered spots west of *Perris* oranges are raised. *Perris* now has a complete irrigation system, which will give a great impetus to the growth of that section.

Perris, a thriving little town which is growing fast, is at the junction of two railroads. There are schools and churches, a bank, brick blocks, two hotels, and a newspaper. Lands in the neighborhood are sold at reasonable rates. Near *Perris* several promising gold mines have been worked for years.

South of *Perris* is the *Menifce Valley*, with a large amount of fertile, slightly rolling land, at present chiefly devoted to grain. There is a post office and store.

Beaumont is a town on the Southern Pacific Railroad, twenty miles east of San Bernardino. The following, from Dr. J. W. Root, of the University of New York, is full of valuable information:

"Nearly every town in Southern California possesses some climatic differences from its neighbor, either to its advantage or disadvantage. My intention in this brief paper is to give the reader, and seeker after health, some idea of the climate of *Beaumont* and vicinity, formerly *San Gorgonio*. *Beaumont* is situated in the *San Gorgonio Valley*, on the S. P. R. R., eighty miles east from Los Angeles, twenty miles from San Bernardino and Colton, and about thirty miles from *Riverside*.

"This beautiful and fertile valley, twelve miles in length and six miles in width, lying between the San Bernardino Mountains on the north and the San Jacinto Mountains on the south, is in a situation peculiarly adapted by nature to healthfulness of climate. We are entirely free from all miasmatic diseases. The altitude of this valley is moderate, ranging from twenty-five hundred to three thousand feet; northward the San Bernardino Mountains loom up to a height of eleven thousand eight hundred feet; in the southeast San Jacinto rises nine thousand feet; and looking

westward the snow-capped peak of 'Old Baldy' is distinctly seen. Truly, our mountain scenery can not be surpassed in beauty—one visitor remarked to me that she had never appreciated the beauty of California's mountains previous to coming here.

"Invalids who wish to try a higher altitude than this of the town, can, within a distance of eight miles, find any altitude they desire up to six or seven thousand feet; and on the ranches which dot the mountain's side can find very comfortable accommodations.

"Pure water is always a desideratum, and here we have it as pure as ever flowed from mountain springs, piped from the mountain cañons to the town. Perhaps the one feature which strikes the invalid, and indeed all visitors to Beaumont, more forcibly and favorably than any other, is the almost total absence of fog. We seem to be beyond and above the fog level. Occasionally, however, when a strong west wind prevails, the fog is forced up the pass from the valleys below, but the first rays of the morning sun dispel it.

"From the foregoing remarks the reader can readily infer that the air is remarkably dry, pure, and invigorating; the air at night is almost as free from moisture as during the day, and through the summer months the invalid as well as the strong can oftentimes enjoy the evenings out of doors with comparative impunity.

"According to a record kept during 1886 at the Highland Home Hotel, the lowest point reached by the mercury was 36°, and the highest 102°.

"Our prevailing winds during the summer are from the west; and although this ocean breeze passes over one hundred miles of warm, dry country before reaching us, it is yet cool and refreshing, tempering what would otherwise be extreme heat, and rendering our summers pleasant and attractive, and not at all enervating.

"Sometimes, however, instead of this ocean breeze, we get one from the desert, and then the heat is oppressive.

"But this, like every other place, occasionally gives the bitter with the sweet. One of our unpleasant features, I might say almost the only one, is the strong east winds, or rather north winds, which sweep around the San Bernardino Mountains and up the pass from the east. These winds amount sometimes to almost a gale, and continue for two or three days; they are very

drying in their nature, absorbing every vestige of moisture in their path; however, they are of only occasional occurrence during the autumn and spring months.

“With the exception of those cases in which altitude is contraindicated, invalids of all classes do well here, particularly those afflicted with pulmonary diseases, such as phthisis, bronchitis, catarrhs characterized by abundant secretion, and asthma.”

Eight miles east of Beaumont is *Banning*, with an altitude of twenty-five hundred feet, and with a special reputation for benefiting asthmatics. From here a person can make an interesting study of the Mission Indians. All kinds of fruits usual in Southern California, except oranges, lemons, and limes, are raised here.

Fifty miles east of San Bernardino is *Seven Palms* station, from which a daily stage carries passengers to the noted Agua Caliente Springs, seven miles away.

Indio, the central of the Colorado Desert, is situated in Riverside County, one hundred and twenty-seven miles from Los Angeles, on the Southern Pacific Railroad. It is the most arid civilized town in America, the rainfall in 1890 being 0.73 of an inch. Of this amount, 0.06 fell in February, 0.15 in April, 0.10 in August, 0.21 in September, and 0.22 in December. In 1891 there fell 3.06, but this all fell in February and August, 1.91 having fallen in February and 1.15 in August. In 1892 there fell 2.69 inches. Of this, 2.00 fell in January, 0.33 in February, and 0.22 in March. In 1893 there fell 3.59 inches. Of this, 0.03 fell in January, 1.61 in March, 0.95 in May, 0.05 in July, 0.75 in August, 0.07 in September, and 0.14 in November, thus making an average annual rainfall of 2.5 inches. Some idea of the temperature of this place may be gained from the following table for 1893: In January the lowest point registered by the thermometer was 35°, the highest 90°, and the mean temperature at 7 A. M., 45°; at 2 P. M., 83°; and at 9 P. M., 53°. In February the lowest point reached was 40° and the highest 90°. In

March the lowest was 40° and the highest 101° . In April the lowest was 50° and the highest 100° . In May the lowest was 60° and the highest 103° . In June the lowest was 70° and the highest 111° . In July the lowest was 75° and the highest 116° . In August the lowest was 78° and the highest 116° . In September the lowest was 70° and the highest 113° . In October the lowest was 50° and the highest 102° . In November the lowest was 30° and the highest 90° . In December the lowest was 30° and the highest 80° . The valleys of the river Jordan and the Dead Sea are twelve hundred and seventy-two feet below sea level, and Lake Assal, in Eastern Africa near Abyssinia, is seven hundred and sixty feet below sea level. It is claimed that, on account of the great atmospheric pressure in these depressions, persons suffering from bronchial affections experience decided benefit from the increased quantity of oxygen inspired and the ease with which respiration is accomplished. The altitude of Indio is fifty feet below sea level. It is in the basin which lies from sea level to three hundred and fifty feet below sea level, and in which the Salton Lake of two or three years ago was a portion. This lake was about twenty-five miles from the town of Indio.

Indio has a good hotel, post office, telegraph office, store, and an excellent water supply. Four miles from the town is an extensive grove of palm trees that are indigenous to this desert. In these forests near Indio there are five hundred of these giant palms, standing far enough apart not to lose their individuality. When in the midst of them one feels as though he is surrounded by the giants of the story books of his childhood, and almost expects to see them suddenly walk away. Almost all of these great palms have been burned around their bases. This has been done by the Indians. Some say that they burn these trees in order to cause the fruit to mature rapidly. The dates from these trees are much sought for by the

natives, and yet they will ruin the trees in order to get this fruit early. Others say that they burn the trees believing that the aroma is gratifying and pleasant to the spirits of their departed friends. Whatever the cause, it is a great shame that these beautiful trees should be thus destroyed, and the Government should take some steps to protect this unique forest. With a little care, this palm grove in the midst of California's great desert could be made one of the most attractive points in America. There are in this grove a number of little palm trees springing up, and on their first appearance they simulate a blade of grass. An expenditure by the Government of a few hundred dollars annually to protect these little sprouting trees and prevent injury to the older ones would soon bring this remarkable place into a state of great beauty.

From Indio can be seen Mounts San Jacinto, San Bernardino, and Grayback, on all of which there is snow the year round. Near the town is an Indian village inhabited by the tribe known as the Coahuillas, who are said to be vegetarians and cremationists.

About twenty miles from Indio are the Volcano Springs, and twenty-five miles away are the Salton Salt Works. In fact, there are many things in this vicinity of interest, and one never grows tired of watching the varied tints of the mountains that surround this basin.

For many years there have been indisputable evidences of the benefit derived from the climate of Indio. Persons suffering from rheumatism, asthma, phthisis, and nervous prostration are all benefited. I do not mean that all persons suffering from these diseases are benefited, but that a large proportion of cases, in all these diseases, improve greatly at Indio there is no doubt.

A combination of aridity and high altitude injures the person suffering from overwork and nervous trouble, while aridity with a low altitude soothes and rests and

thus benefits those who have been suffering from a nervous strain. The physician who has a patient suffering from insomnia can conscientiously send him to Indio. The nights are most delightful. It is the usual plan of the hotel to throw open all the windows and doors and practically sleep outside, and yet no person catches cold. The consumptive who along the coast finds it necessary to protect himself from the night air, can sleep out with impunity. Physicians recommending patients to try Indio should caution them to first secure accommodations at the hotel, because there is always a far greater demand than they have room for. The relative humidity has only been observed for the winter months when the mean was 46° , but during the balance of the year it must be much less. Asthmatics claim to get almost miraculous relief here.

The Southern Pacific Company have recently shown their wisdom by putting up a number of three-room cottages, so that consumptives are not annoyed by being brought in proximity with other invalids. These cottages have solved the problem of giving comfortable quarters for the patients without necessitating the exposure to the depressing influence that comes from other invalids.

The frail patient should not attempt to remain at Indio later than May, and should not return before October, yet the sufferer from rheumatism, otherwise robust, might be benefited by remaining during the hot months. I have been out on this desert in midsummer and suffered very little inconvenience from the great heat. This is due to the dryness of the atmosphere. No sunstrokes ever occur, and the men work out in the hot sun during the very hottest of weather. In this locality California has a health resort to compare with which there is no other place in the world. Its great advantages are, first, aridity; second, mildness of temperature during the winter months; third, equability of temperature; fourth, ex-

cellent water supply; fifth, good hotel accommodations; and sixth, satisfactory railroad facilities.

Palmdale, six miles from Seven Palms, is the center of Palm Valley, a sheltered nook of four thousand acres, at the eastern base of Mount San Jacinto, on the western border of the Colorado Desert, that has long been cultivated in a primitive way by the Indians. Mrs. Jeannie C. Carr, author of *Trees, Shrubs, and Wild Flowers of Southern California*, after a recent visit to this valley, says:

"The physical geography of Southern California accounts for many otherwise marvelous phenomena in its vegetation. But few are aware that the forest belt of San Jacinto Mountain, like Orizaba, in Mexico, begins in a natural grove of palm trees. There the *Washingtonia filifera* has reached its northern limit, and is found in several noble groups from forty to sixty feet in height. The roots, filling the soil pockets of a rocky glen, are kept moist by copious springs; and the fruit, which hangs in immense clusters, weighing from fifty to a hundred pounds, is very ornamental from the contrast of the shining black berries with the ivory-white pedicels upon which they are strung. The fruit has the taste of dates, and was a favorite food of the Indians until they derived a greater benefit from its sale to collectors. The commonest and most easily propagated of the palm family, as usually seen in cultivation, it retains little of its native dignity and slender grace.

"But in Palm Valley the polished leaves unfold in perfection among the warm rocks, and hundreds of young plants are seen in different stages of growth, for here is perpetual summer in sight of perpetual snow. . . .

"There is also a remarkable spring near Palm Valley, seven miles from the station of Seven Palms, on the Southern Pacific Railroad, to which the Indians have resorted for a hundred years. It belongs to a reservation of the Cerraños, whose captain, Old Francisco, is believed to be a hundred and twenty years old. Anywhere in this wonderful region, 'hid of old time in the West,' the marvel is not in seeing a hale and hearty centenarian, but that one should die at all, where the air and the waters which come from the snowy summit of San Jacinto are strained of all impurities.

"Of all the reservations, this of Agua Caliente has been the most coveted by the all-conquering race, not so much from greed as in obedience to a higher law which includes wild Nature in the processes of human development."

Palmdale, with the exception of the acre here and there poorly cultivated by the Indian, had remained untouched by the hand of man until January, 1888, when a company of business men organized and purchased all the tillable land. Their next step was to get water for irrigation. This they did by diverting the contents of the White-water Creek, twelve miles away, into aqueducts that now carry the life-giving water over every acre of their land. This land to-day, instead of being almost entirely apparently a desert, is being rapidly covered with fruit trees. Here is a remarkable contrast in climates that I have personally experienced: Seven Palms Station is in the midst of a sandy desert, where there is a constant wind. This wind blows the sand with such force that from time to time the telegraph poles have to be renewed, having been cut through by the sharp sand beating against them. The western sides of the houses here are also being steadily ground, while the window panes have become white and opaque: but three miles from Seven Palms, on the way to Palmdale, the wind entirely subsides, and here for eight months in the year there is a most delightful climate. Grapes, melons, figs, and other fruits ripen several weeks earlier than in Los Angeles and bring higher prices.

Riverside.

Ten miles south of San Bernardino, seven miles south of Colton, fifty miles northeast of the Pacific Ocean, and sixty miles east of Los Angeles, is Riverside, the most noted orange section in Southern California. The population is about seven thousand.

Even the visitor from other portions of Southern Cali-

fornia, who has been accustomed to orange trees, draws a deep breath of astonishment when he sees the wondrous beauty of the Riverside orange grove.

It is true there are soil, climate, and water just adapted to this industry, but the potent factor back of these elements is an industrious, enterprising population, who take a pardonable pride in the beauty of their place.

Hon. Frank Pixley, editor of the San Francisco Argonaut, recently deceased, visited Riverside just after an extended trip through Europe, and then wrote: "I stopped at Riverside. Of all the places in Europe or America that I have ever seen, this is incomparably the most interesting, the most prosperous, and most beautiful." Rev. Thomas K. Beecher, of Elmira, N. Y., calls it "a garden plat ten miles long." Mr. Beecher says: "One can ride or walk mile on mile through vineyards and orange groves, the wayside delineated by hedges or shaded by eucalyptus trees sixty feet high, almond trees in bloom, peach, pear, apricot, fig, and walnut thrown in for luxury and variety! The roads are hard and ringing beneath the trotter's feet, avenues of residences, whose architecture is of no mean pretensions; fountains, flower gardens, pastures, and mowing plats; in short, a garden township without a wasted acre."

These comments of Messrs. Pixley and Beecher were made about twelve years ago, and great has been the change since then. Riverside has been extended, its water supply greatly increased, a still finer class of residences built, railroads to Santa Ana, Los Angeles, Colton, San Bernardino, and San Diego now take the place of the stage of those days, while large brick blocks and busy streets indicate that Riverside, beside being a health and pleasure resort, is also becoming a business center.

Riverside is a striking example of what can be accomplished in Southern California by well-directed efforts in irrigation. A little over twenty years ago the site



Artesian Wells, South Riverside.

of Riverside was a forbidding, arid plain, covered with cacti and brush. This season the district ships twenty-five hundred car loads of oranges, and there are nearly ten thousand acres of groves within a radius of a few miles.

At Riverside the advantages of city and country life are combined. Most of the residences stand in spacious orange groves, and the daily mail is delivered at the houses. The people are cultured and refined. Riverside is said to have a greater per capita wealth than any other city in the United States. There are four banks, with average deposits of \$1,200,000, and two savings and loan societies. The population, by the census, was 4,683. The assessed valuation of property is nearly \$5,000,000.

One of the features of the Riverside section, to which it owes its wealth and beauty, is the system of canals, by which an unlimited amount of water is always available for irrigation purposes. A complete domestic water system is being rapidly extended to every part of the settlement.

The picking, packing, and shipping of an orange crop worth about \$1,000,000 employs many people. Within the city proper there are at least twelve packing houses, and several more just outside. Besides the orange groves, there are over twelve hundred acres in raisin grapes within the district, from which from two hundred to two hundred and fifty car loads of raisins are shipped. New orchards are constantly being planted in outlying sections.

Riverside takes great pride in her Magnolia Avenue, a beautiful drive one hundred and thirty-two feet wide and twelve miles long. This avenue is lined with eucalyptus, pepper, palm, orange, and magnolia trees. It is well worth seeing. Here, again, it should be said that no tourist who crosses the Rocky Mountains can afford to miss a drive down this avenue.

Riverside has two daily papers, The Daily Press and The Daily Enterprise, ten churches, two banks, and the usual number of secret societies. There are a number of handsome business blocks, the streets are well graded and clean, and altogether Riverside is a model city. Trains from San Bernardino and Colton connect five times daily with all overland trains on Southern Pacific and Santa Fé roads. The tourist can go to Los Angeles from Riverside by way of Colton, San Bernardino, or Santa Ana, just as he chooses.

On the railroad between Riverside and Santa Ana is *South Riverside*. The latter is seventeen miles from Riverside proper, and has a bank, hotel, etc. It has a slightly location on a sloping mesa, is well watered, and surrounded by some two thousand acres of young citrus groves. South Riverside undoubtedly has a brilliant future. Back of the town is a celebrated mineral spring, water from which is bottled and sold in Los Angeles.

At the World's Fair at New Orleans, Riverside oranges came out victorious by taking the following prizes: One gold medal for the best twenty varieties of oranges—open to the world. One gold medal for the best twenty varieties of oranges—open to the United States. One gold medal for the best twenty varieties of oranges—open to California.

Average Rainfall in Inches.

PLACE.	Period of observation.	Spring.	Summer	Autumn.	Winter.	Year.
Los Angeles, Cal. . .	5 years.	3.73	0.01	1.91	7.23	12.88
San Francisco	20 "	4.80	0.49	2.68	12.32	20.29
Asheville, N. C. . . .	11 "	.....	.....	.....	.....	40.20
Cincinnati	41 "	11.17	12.67	6.29	9.83	42.96
New York city	29 "	11.43	13.08	11.20	10.81	46.52
Jacksonville, Fla. . .	13 "	19.01	21.27	13.07	8.66	53.01
Riverside, Cal.	6 "	.....	.....	.....	.....	10.40

Climate of Riverside.—Dr. W. B. Sawyer, a graduate of Harvard, came to Riverside on account of pulmonary trouble. As soon as he was able to be around, he sought some outside business. He finally purchased a dairy and drove the festive milk wagon around at an unearthly hour in the morning.

The Doctor has long since resumed practice, and the following is from his pen: *

“To the north, twelve or fifteen miles, is the range of San Bernardino, its eastern peak eleven thousand feet high, snow-capped and cold, falling rapidly off to the westward, where for miles the summit is clothed with pine forest. Just over the divide lies the desert, two hundred feet below sea level, and between the two nearly every altitude may be found at all desirable for a consumptive. If any patient or his physician desires a higher altitude, perhaps it would be as well to stay at home.

“To the east, between Riverside and San Jacinto Mountain, are two table-lands, separated by a range of foothills. The first, upon which this city is built, about nine hundred feet above sea level; the second, upon which are found the settlements of San Jacinto and Perris, and many so-called dry ranches (because not supplied with water by irrigation ditches), about fifteen hundred feet in altitude. To the southeast, rising rapidly from the very city itself, is an irregular mass of hills and sloping plains overlooking, to the west the Riverside plain, to the east the San Jacinto, and to the south Elsinore, with its pretty lake. This, the Gavalon (Hawk), contains the now quite famous tin mines, the Minafe, Santa Fé gold mines, and, scattered about among the hills, wherever there is a spring or flat with grass and the possibility of well-water, the ranches of settlers.

“To the south, twelve miles, stretches Arlington, one vast orange grove, with the fruit now turning yellow.

“Below Arlington the land slides off in a gentle decline a few miles, until it meets the northern slope of the table-land, behind

* A Study of Riverside Climate, with Suggestions as to its Adaptability to Cases of Phthisis. By W. B. Sawyer, A. M., M. D. Southern California Practitioner, March, 1887.

which, and of the same name, is the range of mountains known as the Temescal. Through a break in this chain runs the Santa Ana River in its cañon, up which comes the sea breeze and an occasional errant fog.

"To the west, first the river, which, like most California streams, runs upside down, the bottom being on the top and the water underneath; then more table-lands and foothills, till twenty-five miles distant is the Cucamonga Range, at the base of which are Ontario, Cucamonga, and Etiwanda.

"The city proper rests within a small half-circle of foothills, approaching quite close on the west and north, and but a couple of miles distant on the east, though north and south are broad areas of plain-land sloping to and away from it southerly.

"An area of ten by twelve miles is incorporated as city limits, but this embraces Arlington and much outlying country. The entire population numbers three thousand and ten, of whom about fifteen hundred live in the town proper, and the remainder on the fruit ranches adjacent above and below.

"The climatic and atmospheric conditions resultant from this geographical situation, elevation, and distance from sea and mountain are unique.

"First, as to temperature. It is warm, but not hot, reaching in the summer months a maximum high point of 108° to 110° , and in the winter from 78° to 80° . The average during the six summer months from sunrise to sunset is only $73\frac{1}{3}^{\circ}$, and in the winter months 60° . The very extremes of heat and cold are touched but seldom and at long intervals, and last but a short time. The high point is reached somewhat earlier and the low point a little later than usually observed elsewhere, the former being gained generally during the hour between noon and 1 P. M., and the latter at or very shortly after sunrise. The usual nightly fall and daily rise is more marked, if anything, than in colder climes, and it comes with greater certainty, regularity, and evenness. In the summer months it is greatest, in the winter least—the average variation for January being 20° , and for July 34° . The night is rare when overcoat and blanket is not welcome and comfortable, and the day unusual when wraps are needed at noon. The causes for these are, first the sun. It is a universal observation that nowhere is its influence so potent. Obscure the sun in winter, and the prevailing chill of the atmosphere drifting and

settling from the snow-clad mountains is at once apparent. Morning and evening house fires are essential, and the shady side of the street is unsafe for the invalid. The sky is little clouded even in winter, as compared with the clear days, and from its first rising till its setting, the one most prominent, most irresistible, and most emphatic feature of landscape and climate is the sun. It is only, apparently, a question of time, there being no appreciable difference between the heat-producing quality of its rays between December and June. Hence the high daily average of winter. A second cause alike of the constant day and night variation and of its excess in summer over winter months is the exceeding dryness of the soil. As soon as the effect of the winter rain has passed, usually by the latter part of May or first of June, there is no moisture at all in the soil for many feet below the surface, except in the comparatively small oases of irrigation. Radiation at night is unhindered, rapid, and complete.

"Again, the slope of the land to the south gives a larger proportion of the sun's rays to each square foot than if level or sloping northward, and hence the absorption of heat is a little in excess of normal, while the night radiation is the same.

"As quite prominently affecting the temperature should be mentioned the cool sea breeze blowing unremittingly during the summer months from the southwest and the desert winds from the north and east through the San Gorgonio and Cajon Passes. The latter come once in three or four weeks during the winter season, flushing contagion from the valley and bringing a warm breath from the Mojave, and uncomplimentary language to the lips of the natives.

"The ordinary wet season at Riverside is much drier, has less rain, and a larger proportion of dry, clear, sunshiny days than the average summer in New York, Boston, or Chicago. The name wet season is given to the months between September and June because during that time all the rain for the year is apt to fall, and because for the remainder of the year no rain falls.

"During this period the rain falls in showers of from one to four days' duration, there being between these showers intervals of four days to weeks of clear open weather.

"In addition to the precipitation in rain, occasional and very infrequent fogs add a trifle to the total moisture. They drift into the valley from the seaward, coming up in the early morning and

vanishing by nine or ten o'clock in the forenoon. They occur more often in the fall and winter months, but come so seldom and are so light that their effect upon the atmospheric moisture is insignificant. From July, 1885, to July, 1886, there were two hundred and eighty absolutely clear days, thirty-eight days of rain, in many of which there was simply a shower with a precipitation of one tenth of an inch or less, the balance of the time being clear, and forty-seven in which there was a longer or shorter interval of trifling fog in the early morning.

"There is little apparent selection as to month or time in the month for rainfall, though the record shows February and March to have had the largest percentage for the six years given:

Rainfall in Months.

MONTH.	1880 and 1881.	1881 and 1882.	1882 and 1883.	1883 and 1884.	1884 and 1885.	1885 and 1886.	Aver- age.
September.....	....	0.10	....	....	....	....	0.10
October.....	....	0.40	0.13	0.97	0.12	0.02	0.27
November.....	0.20	0.25	0.29	....	0.12	1.34	0.36
December.....	2.26	0.40	0.20	2.25	2.56	0.62	1.38
January.....	0.48	1.70	0.09	0.84	0.77	2.21	1.015
February.....	0.25	1.40	0.83	12.00	....	1.38	2.64
March.....	1.30	1.08	0.80	6.26	0.01	1.95	1.91
April.....	0.74	0.72	0.26	1.67	2.15	1.43	1.16
May.....	0.03	0.08	0.25	1.99	0.24	....	0.43
June.....	....	0.18	....	0.52	....	....	0.10

Jan. 22, 1882, 8 inches snow. Aug. 22, 1884, 3 inches hail and rain.

Total Rainfall.

Season of 1880 and 1881, 5.26	Season of 1883 and 1884, 22.54
Season of 1881 and 1882, 6.31	Season of 1884 and 1885, 5.97
Season of 1882 and 1883, 2.94	Season of 1885 and 1886, 9.32

"The effect of the water used in irrigation upon the atmosphere it is impossible now to determine. In rough numbers, the amount used daily throughout the entire length of the settlement is about two thousand inches * of continuous flow.

* An "inch" of water is the amount that will flow through an aperture one square inch in area, under a pressure of a column of water four inches high.

"This two thousand inches, while flowing into the settlement steadily all the year round, is diverted from day to day from one orchard to another, so that the relative humidity of the soil throughout the entire settlement is about the same, varying little the entire year.

"Third, as to purity. The great sources of atmospheric supply for this entire country is the broad area of the Pacific Ocean on one side and the great American desert on the other. In neither one of these sources are there any known beds of infection, and in its passage to Riverside from any point of the compass the air can not pass across any infected regions, malarial latitudes, marshy lands, or anything decaying or dead. Scientifically we can not speak as yet, for no tests have been made, but to the unscientific observer it is so pure as to call forth remark. It does not seem possible that there can be any elements of impurity in the air. The soil of these great plains has not been dampened deeper than a few feet from an age to which the memory of man runneth not back, and except the 'flowers that bloom in the spring,' and die in the spring as well, they have had no green thing upon their surface for the same period.

"The effects produced upon phthisical patients is wonderful. Many men and women in Riverside cheerfully give evidence of it from their own personal experience.

"The colony beginning some eleven years ago as a purely irrigation venture, readily attracted men of means who had sought California for their health, and who found in orange culture and the various enterprises of a growing settlement an occupation at once pleasant and profitable, and directly in the line of treatment. Many such are now living, as active, as well, and apparently as free from phthisical taint as if never affected."

SANTA BARBARA AND VENTURA COUNTIES.

The Riviera of the Pacific.

Santa Barbara and Ventura Counties are to America what the far-famed Riviera is to Europe. With their mountains and valleys, their delightful climate and varied products, their fishing and hunting, their mineral springs

and warm surf-bathing, and their elegant hotels and comfortable homes, they contain almost everything that could be desired. The farmer and the artist, the fruit grower and the silk grower, the lover of wine and the pious devotee, the archæologist and the florist, can each have his wishes fully gratified in these two northern counties of Southern California. The early completion of the gap in the coast line of the Southern Pacific Railroad will place these counties on the main traveled route between Los Angeles and San Francisco. Santa Barbara contains 1,450,000 acres.

Ventura County lies north and west of Los Angeles County, and east of Santa Barbara County. It has about forty miles of seacoast and two good wharves—San Buenaventura and Hueneme. The surface is a succession of valleys and mountains. The products are the same as those of Los Angeles County, with the addition of navy and Lima beans, and canary seed. Until this year it was not appreciated by the traveling public; but now that it is traversed by the Southern Pacific Railroad, its numerous objects of interest attract almost all tourists.

Two trains leave Los Angeles daily for Santa Barbara. The visitor who wishes to see Ventura and Santa Barbara Counties should purchase at the Southern Pacific ticket office through tickets to Santa Barbara, and then get stop-over checks when desired. The road goes thirty miles directly north from Los Angeles to Newhall in Los Angeles County, and deflects to the west into the Santa Clara Valley, Ventura County. This valley is a rich, well-watered territory, about forty miles long, traversed by the Santa Clara River, which has its origin in the Soledad Cañon, and reaches the sea between San Buenaventura and Hueneme.

The railroad, on leaving Los Angeles County, passes through the immense San Francisco Ranch. On this ranch, for miles, are beautiful meadows, fat cattle, and

large wheat fields. Next, the noted Camulos Ranch is traversed, and every person on the car is craning his neck to get a peep at the home of Ramona, but all he can see are the orange groves, vineyards, and olive orchards, for the historic house is so hidden by foliage that it can scarcely be seen from the car window. All the improvements of the Del Valle homestead are on the south side of the railroad. On the traveler goes, past good, bad, and indifferent places. The keen eye will now and then see away up toward the hills a bee ranch, the white beehives resembling, at a distance, a flock of sheep.

Soon the Sespe Creek is reached. Here, March 23, 1877, the terrible tragedy known as the More murder occurred. A bitter feud had arisen between Thomas W. More, a wealthy landowner, and a number of the settlers. On this night they set fire to his barn, and as he ran out he was riddled with bullets. A meeting of the Sespe settlers was convened the following evening at the residence of F. A. Sprague, who was afterward proved to be the chief conspirator. Sprague acted as secretary of the meeting, and presented resolutions "deploring with deepest regret the awful tragedy." Sprague and six others were afterward arrested, tried, found guilty, and Sprague sentenced to death.

Owing to one of the witnesses for the State retracting his testimony, the Governor commuted the sentence to imprisonment for life, and Governor George Stoneman pardoned him nine years later, and, at the date of writing, he is with a married daughter near the Matilija Springs.

W. E. Shepard, now a prominent lawyer of San Buenaventura, was then editor of the *Ventura Signal*, and, like a true newspaper man, went to the scene of the assassination the following morning. From footprints and surrounding evidence he formulated and published a theory so much like what proved to be the true history of the case, that an envious local editor suggested that he must

have been in the conspiracy, and to his great consternation, exchanges began to come in with accounts of the new-found accessory to the murder. Such is the reward of enterprise.

It is said that not one of the conspirators, nor any member of their families, has prospered since that date; that they have all left the Santa Clara Valley, and are scattered in many directions.

Santa Paula is a prosperous town. This town is in the Santa Clara Valley, sixty-six miles from Los Angeles, and seventeen miles from San Buenaventura. There are several large oil tanks here, and petroleum is shipped extensively, after being piped to this point from wells in the mountains. A good quality of brick is manufactured here. Corn, beans, and barley are extensively raised in this vicinity, but it is the fruit of which its residents are proudest. Apricots, oranges, and lemons reach perfection here. Olives, peaches, apples, and figs also do well. The beautiful orchards that the railroad passes through render argument unnecessary. There is abundant water. That used for drinking is piped from the Santa Paula Cañon. There are the usual churches and societies.

From Santa Paula on to Ventura is a rich, productive, highly-cultivated valley. The next station is Saticoy, and a few miles farther west is *San Buenaventura*, the county seat of Ventura County. This is an old town. The point of greatest interest is the Mission Church. The San Buenaventura Mission was founded March 31, 1782. The church is yet in a good state of preservation. Its brick walls are six feet thick. The old olive and palm trees are also objects of interest, some of them being very large. An aqueduct, six miles long, built by the mission fathers, conveyed water from the Ventura River. There are nearly four thousand persons buried in the little lot west of the church.

In 1828 this mission owned thirty-seven thousand cat-

tle, nineteen hundred horses, three hundred sheep, and four hundred working oxen.

San Buenaventura, commonly called Ventura "for short," is most pleasantly located on gently sloping land by the ocean, with low hills at the back and mountains farther off, which shelter it from rough winds. The census of 1890 gave the city 2,320 inhabitants, an increase of over one thousand over 1880, and it has since grown considerably. There is much commercial business and some manufacturing. A large amount of produce is shipped from its wharf by the coast steamers. There is a street railroad, an excellent electric-light system, good water supply, banks, two fine hotels, churches, schools, handsome business blocks, a sewer system, and a number of attractive residences in tasteful grounds. One of the school buildings cost thirty thousand dollars. A beautiful avenue, along the banks of the Ventura River, is sprinkled daily for a distance of five miles. Several newspapers attest the fact that Ventura has an intelligent population. The water of the river is used to manufacture electricity and ice, and a railway to the Ojai Valley, run by water-power, is already completed for a distance of several miles. A project is on foot for a large water-storage system in Ojai Valley, which will supply Ventura with enough power to run a number of factories.

One of the notable enterprises of Ventura is a seed-and-bulb nursery covering thirteen acres, from which eastern seed houses are supplied. Back of San Buenaventura are the remains of the picturesque old mission after which the city and county are named.

Ventura deserves to be more frequented as a resort. The opening of the through coast line will bring it into greater prominence.

This is a great center for the oil business, and there are three refineries. A visitor was recently being escorted through one of these refineries when he innocently asked

the manager as to the quality of the oil. The answer was: "The very best, the very best, sir! 150° fire test. If you don't believe it look on the head of the barrel."

Twelve miles south of San Buenaventura is *Hueneme*, where there are extensive wharves and the largest warehouses on the California coast south of San Francisco. The wharves were built by Hon. Thomas R. Bard in 1870. Hueneme has a natural harbor, and will doubtless eventually prove a place of considerable importance. The wharf has paid a good interest on the investment from the start.

Just back of Hueneme is a rich territory of several hundred thousand acres, a great portion of which is virgin soil, never having been utilized for anything but grazing purposes. One of the largest of these ranches is the Simi Ranch of ninety-eight thousand acres, that has recently been purchased by a syndicate, and has been subdivided and placed upon the market. There are several prosperous horticultural settlements on this ranch.

A railroad company has recently been organized at Los Angeles to build a road from that point to Hueneme. It is generally understood that this road is the work of the Santa Fé Company, and is the beginning of a coast road to eventually extend from Los Angeles to San Francisco.

Nordhoff—The Ojai Valley.

Every reader of this work has probably heard of the Ojai Valley, which contains the town of Nordhoff, and visitors of San Buenaventura should all take a trip to this noted resort. Nordhoff is fifteen miles north of San Buenaventura. Stages meet all trains. There are comfortable hotels.

For the first few miles the road passes through the

suburbs of San Buenaventura, and the orange groves, vineyards, walnut groves, olive and apricot orchards that surround the cozy homes of the town are a delight to the eye; but soon the scenery is more picturesque. The stage skirts the edges of the Ventura River, and now and then the horses plunge through its clear, rapid-flowing waters. On either side are gigantic hills and broad, rolling plains, dotted—in fact, almost covered—with the large, umbrageous live-oak, whose perennial foliage furnishes the innumerable horses and cattle, that feed upon the wild clover, protection from the sun in August and shelter from the rain in winter. This whole ride is delightful, the only drawback being the dust which, in August and September, after five or six months without a drop of rain, is annoying. Even in these months no person will regret the ride. There is wilder and more rugged scenery in Southern California, but there is nothing more artistically beautiful.

All too soon the drive is over. A higher elevation has been reached, and between the sturdy oaks are glimpses of farms and white cottages, lawns, and fields of swaying golden grain ripe for the reaper. This is the Ojai Valley, and here is Nordhoff, its town and post office, named for the author, Charles Nordhoff, whose writings have been read in almost every intelligent household in the United States. This valley contains seventeen thousand seven hundred and ninety-two acres, and is divided into two parts: the Lower Ojai, in which Nordhoff is situated, and which has an altitude of from eight hundred to a thousand feet; and the Upper Ojai, which has an altitude of from eleven hundred to thirteen hundred feet.

The Upper Ojai is noted for its orchards, while the Lower Ojai is particularly noted—agriculturally—for its fields of beans and grain, but it is not for these that the Ojai Valley is most noted. Its great reputation has been

derived from the curative value of its climate in cases of consumption and asthma.

Ojai is said to mean "a nest," and this little valley is indeed a nest in the mountains. It is literally surrounded, with the exception of the pass for the stage roads, by the San Rafael and Santa Ynez Mountains. It is a mountain pocket. These mountains shelter it from harsh winds and protect it almost entirely from the fogs that come in from the sea.

From the Ojai Valley House can be pointed numerous farms, and in each instance the family owning the farm came here for the benefit of an asthmatic. In the Ojai Valley these asthmatics live comfortable lives.

In September, 1887, eating a hearty meal at the Ojai Valley House table was a man by the name of Sacket, from Brooklyn, New York. For seventeen years he had been the usher in the right-hand gallery in Plymouth Church, but his health broke, his lungs became diseased, and hæmorrhages brought him to the verge of the grave. As a *dernier ressort* he came six months before to the Ojai Valley House, but his cough was so incessant that it disturbed the other boarders at night, and a tent several hundred yards away was provided for him. His cough soon ceased, he gained rapidly in strength, and at the date mentioned he was working twelve hours daily on a neat little cottage of his own.

The mortality among children is exceptionally low.

Fruits of almost every kind can be raised in this valley. There are pleasant drives, interesting mountain walks, horses that will safely carry the venturesome to the top of the mountains, and croquet and lawn tennis grounds under the oak trees, where the hours can be whiled away.

Three miles away are the Matilija Hot Springs. There is the "creek road" and the "upper road" from San Buenaventura to Nordhoff, and the tourist can go one way and return by the other.

In and near this valley are large bodies of excellent land that the point of the plowshare has never pierced. Arrangements are about completed to build a railroad to Nordhoff, and then these rich acres will be subdivided into small farms.

Santa Barbara—America's Mentone.

Having returned from Nordhoff, the tourist will doubtless take the train on the Southern Pacific road for Santa Barbara, thirty miles westward. Again will he refer to his map in order to comprehend what he sees. The hills and mountains hug the sea so closely that the railroad is obliged to run almost upon the ocean two thirds of the distance.

A more interesting ride by rail could not be conceived. For thirty miles the ocean is ever in sight. At times, on looking from one side of the car, nothing can be seen but the deep-blue sea, and it takes but a slight stretch of imagination for the traveler to believe that he is out on the ocean sailing. The ocean surf can be heard beating under the train as though it were against the sides of a ship, and now and then a white-winged schooner flits across the watery vista. The cool saline breeze fans the forehead, and, without the nausea of a sea voyage, the tourist has all of its pleasures.

Ten miles from Santa Barbara and twenty miles from San Buenaventura the railroad passes through the western edge of the Carpinteria Valley. This is a body of rich land about ten miles square.

Carpinteria is a collection of homes and farms where the Lima bean and the English walnut are the chief sources of wealth, although various kinds of fruits are raised.

Now *Santa Barbara*, the renowned Mentone of America, is reached. Well does it deserve to be so called. Really, though, it is superior to Mentone as a health resort

for Americans.* It has all the climatic attributes of Mentone—it has the elegant hotels, delightful surf-bathing, pleasant drives, and, besides all these, it has a refined, educated, hospitable American social life.

The Santa Barbara Mission is the one point that above all every tourist wishes to see. This mission was founded December 4, 1786, and was the eleventh one founded in the State of California. It is a very large tile-covered building in an excellent state of preservation. It is situated in the northern part of the city, and its belfry can be seen from the Arlington Hotel.

The founders of this mission were men of wonderful prescience. They built a stone aqueduct several miles long to supply their mission with water, and this same water system is the one that now supplies the city of Santa Barbara. Other means of getting water are at hand, but with its present population of seven thousand no greater water supply is needed.

In 1812 the mission fed 1,300 people and had 4,000 head of cattle, 8,000 sheep, 250 swine, 1,322 horses, and

* "The only instance of the simoom on this coast, mentioned either in its history or traditions, was that occurring at Santa Barbara on Friday, the 17th of June, 1859. The temperature during the morning was between 75° and 80°, and gradually and regularly increased until about 1 P. M., when a blast of hot air from the northwest swept suddenly over the town and struck the inhabitants with terror. It was quickly followed by others. At two o'clock the thermometer exposed to the air rose to 133°, and continued at or near that point for nearly three hours, while the burning wind raised dense clouds of impalpable dust. No human being could withstand the heat. All betook themselves to their dwellings, and carefully closed every door and window. The thick adobe walls would have required days to have become warmed, and were consequently an admirable protection. Calves, rabbits, birds, etc., were killed, trees were blighted, fruit was blasted and fell to the ground, burned only on one side; the gardens were ruined. At five o'clock the thermometer fell to 122°, and at seven it stood at 77°. A fisherman in the channel in an open boat came back with his arms badly blistered."

142 mules, and its productions for that year were 3,852 bushels of wheat, 400 bushels of corn, 126 bushels of barley, and 26 bushels of beans. In 1828 it possessed 40,000 head of cattle, 3,000 horses, 20,000 sheep, and 160 working oxen.

Mrs. Jackson's description of this mission is interesting reading. The rich-toned bells were imported from Spain over one hundred years ago.

After visiting the mission the tourist should go a few steps away to the reservoir and aqueduct, and see how well the holy fathers planned for the future.

In 1850 the first roster of county officers was elected. Edward L. Hoar, a brother of United States Senator Hoar, of Massachusetts, was the first district attorney, but was the next year elected county assessor.

In the year 1851 Santa Barbara had become a place of considerable importance, and the city council entered into an agreement with Captain Salisbury Haley, a civil engineer at Los Angeles, to lay out the city in uniform blocks one hundred and fifty yards square, all streets with the exception of two to be sixty feet wide. State and Carrillo Streets to be eighty feet wide. The survey was accepted, and Captain Haley was paid two thousand dollars by the council. After years of litigation, this survey received a final legal confirmation.

January 24, 1869, the Santa Barbara Press, which is now also a daily, was established as a weekly. September 23d of that year Hon. William H. Seward visited Santa Barbara and made a felicitous speech.

In 1876 Santa Barbara celebrated the Centennial with great enthusiasm. Colonel N. A. Covarrubias, now of Los Angeles, was president of the day. Rev. Stephen Bowers, D. D., the noted scientist and editor, now of Los Angeles, was orator of the day, and Colonel H. G. Otis, now of the Los Angeles Daily Times, commanded the military division of the procession.

The Princess Louise and the Marquis of Lorne spent a part of one season here, and were profuse in their praises of Santa Barbara's climate, products, and society. Santa Barbara prides herself on being more æsthetic and cultured than her somewhat plebeian sisters, San Diego and Los Angeles, and the impress of royalty that the Princess Louise gave the city had a very expansive and exhilarating effect. Santa Barbara's citizens are noted for their politeness. A curious, idle tourist watched two of the city's leading professional men for one day, and in that time they met on the street and elsewhere twenty times, and each time raised their hats and shook hands with each other. Such virtue carries its own reward.

After visiting the mission the tourist should visit the Dibblee place, on the point above the city. This is without exception the grandest residence in Southern California, and commands a complete view of the city and harbor.

Santa Barbara takes great pride in her public library and gives each year a flower carnival or fair for its benefit, lasting four days, which draws crowds of visitors. Mrs. E. A. Otis, in closing a description of this festival in 1887 for the Los Angeles Daily Times, says: "This fair has been a rare success. It will close this evening, and add one more to the floral triumphs of Southern California, where—

" 'Winds are hushed nor dare to breathe aloud,
Where skies seem never to have borne a cloud.' "

The population of Santa Barbara is about seven thousand. Its improvements are in advance of its size. The main thoroughfare, State Street, over a mile long and eighty feet wide, extending from the wharf to the foothills, is paved with bitumen its entire length. Almost all the business is on this street, stores extending nearly

to the end. There is no more brilliantly lighted city on the coast. The chief hotel, which is crowded with tourists during the season, has a world-wide fame. There are several other capacious and comfortable ones. A fine boulevard a mile long, fronting the ocean, has been completed.

There are thirteen church organizations, good schools, a business college, an opera house, public library, race course, and pavilion.

The wharf is safe in almost all weathers, the natural harbor being an excellent one. Stages connect in several points in the county not reached by rail.

Overlooking the town, in the foothills, is the old mission, the best preserved of any on the coast. A spring of mineral water, said to have been used by the mission fathers and now called Veronica, has been developed. It is said to possess remarkable medicinal qualities.

Santa Barbara has beautiful gardens, with a wealth of semi-tropic vegetation. Its citizens are cultured, and many of them wealthy, having retired from business in less favored sections to spend their declining years in this Pacific paradise.

In this work allusions in detail to hotels have been very infrequent, but the Arlington of Santa Barbara must be mentioned. It was built in 1875 by a joint-stock company, at a cost of \$170,000. After the climate the Arlington has done more than any other agency toward giving Santa Barbara its favorable reputation as a health resort. The people of Santa Barbara should look with great pride and gratitude on this hotel and its beautiful grounds. The hotel is well furnished and well managed. Santa Barbara has a south frontage on the ocean and slopes gently to the foothills back of the town. It is brilliantly lighted by electricity, and has a good system of street cars. Its principal business is done on State Street. The following table of monthly mean temperature of the sea

water is conclusive proof of the advantages of Santa Barbara for surf-bathing:

Comparative Temperature of Sea Water.

MONTH.	Santa Barbara, Cal.	Santa Cruz, Cal.	New- port, R. I.	MONTH.	Santa Barbara, Cal.	Santa Cruz, Cal.	New- port, R. I.
January	60°	52°	32°	August.....	65°	60°	70°
February ...	61	58	32	September..	66	60	65
March.....	61	52	34	October....	63	56	58
April.....	61	57	43	November..	61	55	44
May	61	57	52	December..	60	53	36
June.....	62	58	62				
July.....	64	60	66	Mean....	62	56	46

Montecito, three miles away, should be next visited. Rev. E. P. Roe, the noted author, speaks of *Montecito* as "a villa region of blossoming gardens and green lawns." Mr. Roe visited *Montecito* January 1st, and says:

"The orange trees were each laden with from one to two thousand golden-hued oranges, in addition to the green ones not to be distinguished from the leaves in the distance. Even so early in the season there were sufficient number of blossoms to fill the air with fragrance, the brook babbled with a summer-like sound, and the illusion of summer was increased by the song of birds, the flutter of butterflies, and the warm sunshine, rendering vivid the gold and glossy green of the groves. Rising near and reflecting down the needed heat were the rocky and precipitous slopes of the Santa Ynez Mountains. Turning on one's heel, the silver sheen of the Pacific Ocean, gemmed with islands, stretched away as far as the eye could reach. Could this be January?"

This is a suburb of Santa Barbara. There are homes here that would be an ornament to the suburbs of any city.

It was at *Montecito* that the big grapevine grew that was cut down and taken to the Centennial at Philadel-

phia. This vine's trunk was eighteen inches in diameter, and its foliage covered an area equal to ten thousand square feet. It has produced in one year twelve thousand



Santa Barbara Grape-vine.

pounds of grapes. There is now another vine growing here that bids fair to equal the parent vine.

Another trip to be taken is a day's picnic drive to the

Hollister and Cooper places, twelve miles west of Santa Barbara.

The farm of the late Colonel Hollister consists of 4,800 acres. There are 10,000 almond trees, making it the largest almond orchard in the world. There are also 1,200 orange, 500 lemon, 500 lime, and 1,000 olive trees. There are also 4,000 English-walnut trees, and 200 Japanese persimmon (a rich, luscious fruit) trees. In 1872 Colonel Hollister sent to Japan for twenty-five bushels of seed of the tea plant, and at the same time imported two Japanese tea growers. He raised 50,000 plants about eight inches high, but they failed to reach perfection. The date palm groves form an elegant shade for picnic grounds.

Adjoining Colonel Hollister's place is the noted ranch of Ellwood Cooper, consisting of over two thousand acres. Mr. Cooper was the first to introduce the eucalyptus into Southern California, and he is said to have two hundred thousand of these trees, including over fifty varieties, on his place. Mr. Cooper is most noted as an enthusiastic olive grower and manufacturer of olive oil. He began planting olives in 1873. Mr. Cooper also has large orchards of citrus and deciduous fruits.

On these two great fruit farms irrigation has proved to be the great factor. It is a curious fact that in the occasional years of drought in Southern California the mountain streams that supply the water for irrigating have not failed.

The climate of Santa Barbara is admirably delineated in the following paper by Dr. C. B. Bates,⁺ a practitioner of that city:

"My object in this paper is to give a few facts with regard to the climate of Santa Barbara, and also to the therapeutic benefits to be expected from a residence in such a climate, benefits which,

* Southern California Practitioner, January, 1887.

in my experience during a continuous practice of seventeen years in that place, have been realized in many instances. The following remarks apply only to that portion of Santa Barbara County about sixty miles in length, from one to five in width, lying between the Pacific Ocean and the Santa Ynez Mountains and extending from Point Conception southward to Point Rincon. The city itself, forty miles south of Point Conception, is situated on a gentle incline running from the ocean back to the foothills to an elevation of about three hundred and fifty feet. Its aspect is decidedly southeastern owing to an abrupt change in the direction of the coast line. In the latitude of the Mediterranean, shut in on the land side by the Santa Ynez Mountains, some of which are three to four thousand feet high, sheltering it from the northwest winds which prevail on the Pacific coast during the greater portion of the year, protected seaward from the southeast winds by the Channel Islands twenty-five miles away, with the summer's heat and winter's cold tempered by the ocean at its feet, how can it fail to have an equable and pleasant climate? Within the bounds allowed me in this article it is out of the question going into any elaborate analysis of temperature tables, nor is it necessary.

"It will suffice for all practical purposes to give a few striking figures. Records kept during a period of thirteen years show average for January 53.25° , for July 68.45° , and for the entire year 61.43° . Averaging the days upon which the temperature exceeds 82° we find but fifteen for each year and but eight for the same period upon which it falls below 42° . Although so near the ocean, Santa Barbara has for a coast town a remarkably dry atmosphere. The yearly mean of humidity is 69.5° , while a few hundred miles north of us and in cities on the Atlantic coast, 80° and even more are reached. Indeed, the dryness and purity of the air are shown by a custom of the natives who preserve their beef by 'jerking,' hanging long strips of meat in the open air till dry enough to keep for future use. This is done even in midwinter and frequently within a few hundred yards of the ocean. The average yearly rainfall for fifteen years was 17.31 inches, hardly more than would fall on the Atlantic coast during the showers of a summer. The rainy season extends from November to May; the remainder of the year is practically rainless. During the winter months, at intervals of three or four weeks, the rain falls in heavy showers.



Irrigating an Orange Orchard.

lasting perhaps a few days; then comes bright sunshine with charming weather till the next storm. Owing to the porous character of the soil, decomposed sandstone, clay and alluvial, we are

not annoyed with mud; walking is pleasant within a few hours after the storm has ceased.

“ From the foregoing data it is evident we can truthfully claim for the climate of Santa Barbara a remarkable equability, and it is this freedom from sudden changes which constitutes its chief charm, and in which lies its great therapeutic power. The invalid, delicate as he may be, can pass the greater portion of each day during the entire year in the open air. One gentleman, a consumptive, kept a record of the weather, and found that in one year there were three hundred and ten days in which he could be out of doors from five or six hours or more with safety and comfort, and but fifteen upon which he was unable to leave the house; ten of these were rainy and five were windy. It is true our climate is not perfect. What climate is? We have at times wind storms lasting two or three days and bringing clouds of dust; but these are exceptional, seldom more than two or three each year. Then, also, during the spring and fall more or less fog prevails, obscuring the sun and depressing the spirits of the invalid. Nine tenths of this, however, would in the East be called low clouds, not fog; it is high and dry, and to many is a pleasant change from the ‘eternal sunshine.’ As a rule the fogs are not very frequent, and coming late in the evening are usually dissipated long before noon on the following day. The natural incline upon which the town is built, the porous character of the soil, and the system of sewerage recently introduced, insure good drainage, while the water supply brought from the neighboring mountains is excellent. There is no malaria nor any endemic disease. From the foregoing remarks the therapeutic advantages of Santa Barbara can easily be deduced. The equability of the temperature is the great therapeutic agency; local congestions caused by the blood flowing inward from a chilled surface are avoided. In phthisis this freedom from sudden change tends to decrease hemorrhage, to lessen also the local pulmonary inflammation. The open-air life possible to the invalid in such a climate only is also of the greatest benefit. Indeed, during my residence in this place I can recall but one instance of the arrest of pulmonary phthisis in which the chief means of cure was not this out-door life. In a marked case a lady patient of mine lived in her garden, protected merely by a brush shelter, for eighteen months. Day and night for the entire period, excepting only nine nights, she remained

in the open air. Afterward, while camping out on one of the Channel Islands, she was four months without the slightest protection. In disease of the heart, the even temperature giving a regular quiet circulation of the blood is very beneficial; the same is true in kidney affections where a sudden chill will frequently cause a rapid and fatal advance of the disease. In nervous prostration or neurasthenia, in disease of the brain, no better place could be desired. The quiet, peaceful surroundings, the charming scenery, the pleasant drives, the outdoor amusements, the fresh, pure, bracing air, bringing sleep and appetite, are all to be found in Santa Barbara.

"For children and the aged the place is a Paradise; no heat diseases which carry off the little ones so ruthlessly in the Eastern summer, no cholera infantum or membranous croup, while those advanced in years, sheltered from the cold and cutting winds of winter, with but few calls upon their lessened vitality, live on year after year in happiness and comfort. As for asthma, no one climate suits all cases, nor, I think, even the majority. All I can say is that many have tried this place with success; others, unable to live in the town, find immunity from the attack at various elevations on the neighboring foothills; some have left us disappointed and unimproved. I must not omit to mention our hot sulphur springs, useful in a variety of affections, nor the delightful sea-bathing, pleasant on almost any day in the year, for the rate of temperature of the water never falls below 60°, but ranges from that degree to 65°, with a yearly mean of 62°.

"And now, in conclusion, a few words of caution. In Santa Barbara, as throughout California, the nights are always cool, even in the interior; no matter how sultry the day, the night is never oppressive; one sleeps comfortably under a blanket. This is of immense advantage, and yet it has its drawbacks. Just before sunset the temperature rapidly falls and the invalid at this time should remain in the house, or, if out of doors and not briskly exercising, should put on an overcoat. Indeed, although the climate of Santa Barbara is warm, it is not hot; flannels next the skin, with moderately warm clothing, can and should be worn throughout the year. On the other hand, our climate, from its pleasant equability, approaches the subtropical, and my experience convinces me that the diet of a subtropical climate is suitable to this. Vegetables, fruits, hydrocarbons with comparatively lit-

tle nitrogenous food or stimulants. Meat once a day is ample. Those of our visitors who bring with them the habits of their former home, eating three hearty meals a day, with perhaps meat at each and more or less wine or liquor, soon pay the penalty in a deranged liver, impaired appetite, and weakened digestion."

North of Santa Barbara and running from west to east across the county are the Santa Ynez Mountains—a great wall from three to four thousand feet high, with many wooded, watered cañons and romantic glens. The only gateway through this wall, from the mouth of the Ventura River to Point Concepcion, is the Gaviota Pass, a great chasm in the mountains, thirty-six miles west of Santa Barbara. At this is the Gaviota wharf, one thousand feet long, from which a great amount of grain is shipped. Three and a half miles from the wharf is the village of Las Cruces, and three fourths of a mile away are the Las Cruces hot sulphur springs. Five miles northeast are the No-jo-qui (*No-hoe-quce*) Falls, where a beautiful stream takes a leap of a hundred feet. North of these mountains, and between this range and the San Rafael Mountains, is the Santa Ynez Valley, watered by the Santa Ynez River. The principal town in this valley is Lompoc—meaning "little lake"—nine miles from the coast. This is the center of a rich temperance colony. It was founded in 1874 by a colony of two hundred and fifty men, women, and children. The chief desire of the residents is to have a home free from the influence of the liquor traffic. The town contains six churches, numerous stores, schoolhouses, and the usual number of secret societies. In its early history a druggist was found selling whisky. The women of the place appeared upon the scene in battle array, and knocked in the head of his whisky barrel with an axe. A few years later a saloon was started, and on May 20, 1881, at 11.15 P. M. a terrible explosion was heard. The people rushed out of their houses, and found the saloon a total wreck. The Lompoc Record the fol-

lowing day said: "Whether it was done by an earthquake or by a Nihilist from Russia it is impossible to say, as no inquest has been held. . . . The general impression prevails that this is not a healthy place for saloons."

Artesian wells furnish water in abundance. The soil is very rich, thirty-seven hundred pounds of Lima beans having been raised on one acre. Near Lompoc are the ruins of Mission La Purissima Concepcion, founded in 1787.

North of the Santa Ynez Valley is the Los Alamos Valley, twenty-five miles long, and from one to two miles wide, watered by a stream of the same name. This valley contains the town of Los Alamos, which is five hundred feet above the level of the sea, seventeen miles from Lompoc, and sixty-four miles from Santa Barbara. It is the terminus of the narrow-gauge road that goes north to Port Harford in San Luis Obispo County.

The great Santa Maria Valley forms the most northern part of Santa Barbara County. It is said to contain two hundred thousand acres of tillable land, and is twelve miles wide and twenty-five miles long. This valley contains two towns, Guadalupe and Santa Maria, formerly called Central City. Guadalupe is in the northwest corner of Santa Barbara County, seven miles from the coast, one and a half mile from the northern boundary line of the county, and ninety-five miles from Santa Barbara. It contains about six hundred inhabitants and the usual number of churches, stores, and secret societies.

Santa Maria is a few miles east of Guadalupe, on the narrow-gauge railroad. Over a half-million grain bags are sold here annually. It is the center of a rich community of farmers.

Along the Coast.

The Coast Pilot of California, by George Davidson, of the United States Coast Survey, says: "Point Con-

cepcion is a characteristic and remarkable headland, about two hundred and twenty feet in height, lying at the western entrance to Santa Barbara Channel. Once seen it will never be forgotten. When made from the northward or from the eastward it rises as an island; but upon approach is found to be a high promontory, stretching boldly into the ocean and terminating abruptly. The land behind it sinks comparatively low, and at first gradually, but soon rapidly rises to the mountains, which attain an elevation of about two thousand five hundred feet. . . . The lighthouse is upon the extremity of the cape, and upon the highest part, which is about two hundred and twenty feet above the sea, and covered with grass and bushes like the land behind. A fog bell, weighing three thousand one hundred and thirty-six pounds, is placed on the edge of the bluff. Next to the islands of Santa Barbara Channel, Point Concepcion is the most prominent and interesting feature between San Francisco and the peninsula of Lower California. . . . Point Concepcion was discovered by Cabrillo in 1542, and called Cape Galera. . . . The larger mass of the great Japan warm stream that reaches the American coast about latitude fifty degrees, sweeps southward along the shores with an average breadth of three or four hundred miles, and a rate of about sixteen miles per day. . . . On March 24, 1815, the brig Forester, of London, . . . only three hundred and fifty miles southwest by west from Point Concepcion, rescued three dying men (the captain and two sailors) on a Japanese junk that had drifted for seventeen months across the Pacific. . . . Two miles east of Point Concepcion is the anchorage of El Coxo. This anchorage is better than at Santa Barbara, and the kelp is not so compact. . . . The first headland to the northward of Point Concepcion is Point Arguello, distance twelve miles." The steamship Yankee Blade struck some rocks near here October 1, 1854, and four hundred and fifteen

persons perished. Three miles from here, on the Espado Ranch, are some hot sulphur springs. Eight miles north of Point Arguello the Santa Ynez River empties into the sea.

A short distance north is Point Purissima, where the Lompoc wharf is located.

Nineteen miles north of Point Arguello is Point Sal, at the extremity of a prominent cape. There is an important wharf here.

Partially sheltered by Point Sal is the "chute landing," of which the following is a description:

"From the road which encircles the face of the cliff there is built out a wharf, about one hundred and fifty feet long, which projects over the sea forty feet, at an elevation above the surface of the water of about eighty feet. At the outer extremity of this wharf a framework is erected, in which a slide, which works vertically, is placed. From a firm anchorage in the rocks of the cliff a wire cable, about three fourths of an inch in diameter, stretches over this slide, and about six hundred feet out to sea, to a buoy firmly anchored on the bottom. The slide on the frame serves to elevate or lower the cable. Upon this cable is suspended permanently a traveler, which works easily back and forth upon it by means of nicely adjusted sheaves. To this traveler is suspended cages of various sorts, depending upon the nature of the material to be transported. An engine upon the wharf furnishes all needed motive power. The method of operation is as follows: The slide in the framework being lowered and the cable being coiled away on the wharf, a schooner approaches seeking to be unloaded. She passes inside the cable buoy, laying with side to the wharf. From her, cables are run out in four directions to buoys and fastenings in the rocks, and the vessel firmly secured. The end of the wire cable is taken on a rowboat and carried out to and over the schooner and to a buoy beyond, where it is securely made fast. The engine now starts up and raises the slide, which, carrying up the cable, takes up all undesirable slack. The traveler and a cage or cages is run down to the ship, loaded, and at once hauled back by means of a rope attached to it and to the drum of the engine. When it is drawn up a few feet above the end of the wharf, the

load is deposited on a tramway car, which a horse hauls to the mainland, where the car is unloaded, and whence it goes back for another load. The process is simply reversed in loading vessels. A ton may be carried at one time by the traveler, and altogether the apparatus has proved a great success.

"The first grain received for shipment was on July 21, 1880, and the first vessel shipped was the schooner *Golden Fleece*, on the 28th of the following September. Thirteen thousand tons of grain were shipped the first two years, eight thousand of which was in 1881. One million feet of lumber is received annually. There is storage capacity for one hundred thousand sacks of grain."

The Pacific Coast Steamship Company's vessels make triweekly trips between all Southern California ports.

The Islands of Southern California.

The reader will observe on the map of California a number of islands along the coast of Los Angeles, Ventura, and Santa Barbara Counties.

San Clemente.—Going north, the first island (see map) is San Clemente, about fifty miles southwest of San Pedro Bay.* It is twenty and a half miles long, and has an average width of two and a half miles. Like all of these islands, it is high and bold, the southern end being the higher. There are several anchorages about the island. The indentation on the southeast end of the island is called Smuggler's Cove.

Messrs. Oscar Macy, L. C. Goodwin, and S. C. Hubbel, of Los Angeles, have a band of sheep on San Clemente. Twice a year they send over shearers. Between these sheep-shearing times there is but one man on the island, and he has been there in charge of the sheep nearly twenty years. Annually he comes to Los Angeles and draws his year's salary; he then lives like a titled de-

* The topographical statements are from the Coast Pilot of California.

bauchee for a week, and goes back to his solitary island life without a dollar. This island is quite barren, and the sheep get a precarious existence. It was discovered by Cabrillo in 1542, and named San Salvador, after one of his vessels. The present name was given by Vizcaino in 1602.

Santa Catalina (Cat-aye-lee-nah).—Twenty miles north of San Clemente is Santa Catalina Island, twenty-three miles long, with an average breadth of four miles in the southern part, and two miles to the northern. It rises to a height of three thousand feet, and is remarkable for the great transverse break or depression, five miles from the northern end, running partly through it, and forming a cove or anchorage on each side. The land connecting these is very low, say not over thirty feet; but the hills rise up on each side two or three thousand feet, and when sighted from the north or south, the whole appears like two very high islands.

The harbor on the southern side is eighteen and a half miles from San Pedro. There is also a safe anchorage and harbor on the northern side. There are several other fair harbors on the coast opposite the mainland. There are a number of pretty elevated valleys, several mineral springs, and wells of good water.

James Lick bought this island in 1864 of the United States Government for \$12,000. In 1874 his heirs tried to sell it for \$1,000,000, but failed. In 1887 George R. Shatto, of Los Angeles, bought it for \$225,000. A few years ago it was purchased by the Banning Brothers, of Wilmington and Los Angeles, who have made it the most popular summer resort on the Pacific coast. This island was a popular summer resort for Californians years ago. Although there were no accommodations whatever, yet thousands of people went over and camped in order to enjoy the benefits of the climate and bathing, and the pleasures of fishing. There are many wild goats on the



Solitude Cañon, Catalina Island.

south side of the island, that give rare game for amateur Nimrods. The water along the northeast shore is remarkably warm, and people who get chilled on the mainland bathe here with pleasure. Boating is a delightful pastime. The water is always calm, and so clear that fish, mosses, and pebbles can be distinctly seen many feet below the surface. The island has evidently at one time been densely populated, and numerous earthen pots, stone weapons, and bones are to be found in the mountains. Catalina is plainly visible from Los Angeles, forty miles away.

There are several comfortable hotels, and many cottages and tents which can be rented. A good orchestra performs daily. Roads have been built over the island. Steamships make several trips daily from San Pedro and Redondo, connecting with Los Angeles trains. During the past season as many as five thousand people have been on the island at one time. It is the proper thing with Californians to spend two weeks every summer in the swim at Catalina. It was discovered by Cabrillo in 1542, and named *La Victoria*, after one of his vessels. It received its present name from Vizcaino in December, 1602, when it was thickly settled by a people reported to in 1542, and named *La Victoria*, after one of his vessels. It received its present name from Vizcaino in December, 1602, when it was thickly settled by a people reported to be very ingenious, especially in pilfering. Father Ascension, who accompanied this expedition, describes a temple to the sun, found near the two harbors, with images and idols.

Tourists will find a visit to this island novel, interesting, and pleasant. The round trip from Los Angeles, and twenty-four hours at the hotel, costs about five dollars.

Santa Barbara Island.—Twenty-three miles northwest of Catalina is Santa Barbara Island. The extent of the island does not exceed two miles of shore line; its elevation at the highest part is about five hundred feet, and the

top has an area of thirty acres covered with soil, but no water is found, and not a vestige of wood.

Island of San Nicolas.—This island is most distant from the coast, and the driest and most sterile of all these islands. It is about six hundred feet high, eight miles long, three and a half miles wide, with twenty-two miles of shore line. It is sixty-seven miles west of San Pedro.

Island of Anacapa.—This is, in fact, a curiously-formed group of three islands, their entire length being five miles. The west end of Anacapa is a peak nine hundred and thirty feet high. This is separated from the middle island by a gap ten feet wide, through which boats can pass.

The gap separating the middle island from the eastern islands is over two hundred yards wide, but is so full of rocks that it is impassable for boats. Anacapa is nine and a fourth miles from Hueneme and twenty-eight miles from Santa Barbara. There is not a drop of fresh water, but sheep and goats thrive on the dews that cover the island every night. It is a great resort for the seal, sea lion, and formerly the otter, but the latter have been nearly all killed off. The sea lions are killed for their oil. A full-grown male yields about eight gallons. It was on this island that the steamship Winfield Scott ran ashore during a dense fog at midnight, December 2, 1853, in calm weather.

Island of Santa Cruz.—This island is the largest of the channel group, and lies broad off the coast opposite Santa Barbara at a distance of twenty miles. It is twenty-one miles long and has an average width of four miles, while its shore line is not less than fifty-three miles. The island is bold, and about one thousand seven hundred feet in height.

On the northern side of the island there is a roadstead called "Prisoner's Harbor," which is at the opening of a valley where wood and water can be obtained. Almost all kinds of grain and fruit are raised here. The owners

of the island have about forty thousand sheep feeding in its valleys. Mrs. Otis, staff correspondent of the Los Angeles Daily Times, in a recent letter to that journal, describes a visit to the Santa Cruz Island, from which the following extracts are taken:

"It was seven o'clock when we went down to the pretty sail-boat, the Geneva, owned and handled by Captain Larco, the well-known Italian fisherman of Santa Barbara, a man large-hearted, genial, kindly, who has had adventures enough to fill a volume of romance.

"Soon after noon we came in sight of a school of whales, seven in all, two of which appeared to be making directly for our boat. Then commenced a lively pounding of oars and a drumming with whatever would make a noise upon the boat's bottom, and it was not long before these monsters of the deep disappeared from our view in another direction.

"When within a short distance from the shore the sea grew comparatively still, and with well-filled sails we neared the protecting walls of the little harbor, near the center of the island of Santa Cruz. To this quiet harbor, with its unruffled waters, our captain had given the name of 'Lady Harbor,' 'because,' he said, 'it be so quiet and smooth.' The aptness can not fail to be apparent.

"On the rocks great sea lions lay; from the waters scores of them lifted their heads on our approach. A shot from a rifle in the hands of one of our number, and they leaped from the rocks into the sea. Another shot, and the air was filled with their almost human cries, which echoed from every craggy height and were flung back to us from the stony cliffs.

"As a pleasure resort these islands are full of interest, and it is surprising to me that long ago provision was not made for regular trips to and from the islands for the accommodation of tourists and others at Santa Barbara."

Santa Rosa Island.—This is the middle island of the group off the coast of Point Concepcion and Santa Barbara. It is fifteen miles long and ten miles wide, with a shore line of forty-two miles. There is a good passage for ships between Santa Cruz and Santa Rosa with a width of five miles, and one between it and San Miguel with a width of four miles. The outline of the island is bold. It is not so high as Santa Cruz, but attains an elevation of eleven hundred and seventy-two feet.

J. Ross Browne, in the *Overland Monthly*, says: "Numerous springs, having their source in the principal ridge, furnish a sufficient water supply for stock or agricultural purposes. Many parts of the island are conspicuous for their picturesque beauty." The sale of wool from Santa Rosa in one year amounted to over one hundred thousand dollars. Attention has been attracted to this island lately by the report of a tragical murder of a Chinaman by Alexander More, the owner of the island.

Island of San Miguel.—This is the most western of the Santa Barbara Channel Islands. It is seven and a half miles long and two and a half miles wide. Cuyler Harbor is on the northeast side of the island. It is twenty-five miles from Point Concepcion. A sea lion was killed here in July, 1879, that was fourteen feet long, and weighed thirty-five hundred pounds.

San Miguel was discovered by Juan Rodriguez Cabrillo in 1542. Most authorities say that Cabrillo, after visiting Santa Barbara and other points on the mainland, returned to San Miguel and died January 5, 1543, although the California Coast Pilot doubts the statement, and thinks it more probable that he died on the Santa Cruz Island, where he could obtain water, and oak wood for repairs. Be this as it may, no historian has yet expressed any doubt about his death.

Abalone shells are found on the rocks along all of these islands. They have to be pried off with a crowbar,

and it is related of a Chinaman that he attempted to pull one off a rock with his fingers and was caught in the trap and drowned by the rising tide. Many tons of these shells are worked up for sale as ornaments and curios by a Los Angeles house. The meat of the abalone is dried in large quantities by the Chinese and shipped to China, where it is grated and used in soups.

Mineral Springs of Santa Barbara and Ventura Counties.

Santa Barbara Hot Springs.—Dr. H. M. Briggs says: *

"The hot sulphur springs of Santa Barbara are situated at the head of a deep cañon, about five miles to the northeast of the town of Santa Barbara, at an elevation of fourteen hundred and fifty feet above the level of the sea. They number in all seven, and seem to be of two distinct varieties. Those nearest the head of the cañon escape from crevices in the rock, and are four in number, all appearing to have the same properties, the most sensible of which are free sulphur and sulphureted hydrogen; their temperature, 114° Fahr. Another spring is situated about one hundred yards off, in a westerly direction from the first mentioned—temperature, 117° Fahr. Its principal constituent is sulphate of alumina, evident from the thick incrustation of this salt on the under surface of the rock beneath which this water escapes; it also tastes strongly of sulphate of iron, and is said to contain soda and potash, and a trace of arsenic. The two remaining springs are located in a branch cañon, about one hundred rods in a northerly direction from the last one mentioned, and appear to possess the same qualities, with the exception of the temperature, which is only 112° Fahr. No thorough analysis of these mineral springs has ever been made, at least in our time.

"It is said that while this country was in possession of the King of Spain a corps of scientific men was sent out to this coast, commissioned, among other things, to test the properties of the several mineral springs known to abound here, and that in their report they pronounced the Santa Barbara Hot Sulphur Springs

* Mineral Springs of the United States and Canada, by George E. Walton, M. D. D. Appleton and Company, New York, 1883.

to be the best and most medicinal, and superior to any other in California for the cure of many diseases. Whether they came to this conclusion from actual analysis, or from simply witnessing their effect, is not known. Certain it is that at the present day they are becoming famous for their curative effects in many cases of rheumatism, paralysis, various diseases of syphilitic origin, and skin diseases generally; and from a persistent use of the waters (drinking and bathing) many individuals have been cured of such affections."—March 22, 1872.

The late Hon. Oliver P. Morton, United States Senator from Indiana, spent some time at these springs in 1874. They are located at an altitude of fourteen hundred and fifty feet.

Bulletin 32 of the United States Geological Survey gives the analysis of these springs as follows:

Santa Barbara Hot Springs.

CONSTITUENTS.	No. 1, main spring, Hot Springs Cañon.	No. 2, main spring, side cañon.
	Parts in 100,000.	Parts in 100,000.
Sodium carbonate.....	29.6	24.8
Sodium sulphate.....	5.0	Trace.
Sodium chloride.....	8.7	7.6
Potassa.....	Trace.	Trace.
Silica.....	4.2	6.0
Carbonic acid.....	Trace.	Trace.
Sulphohydric acid.....	"	"
Calcium.....	"	"
Totals.....	47.5	38.4

San Marcos Hot and Cold Sulphur Springs.—These springs are situated in Mountain Glen, a picturesque cañon seven miles northeast. There are somewhat primitive but very comfortable accommodations for guests, who can come within a short distance of the springs by the daily stage from Santa Barbara.

Las Cruces Hot Springs are forty-two miles from San-

ta Barbara, near the Gaviota Pass. They have quite a local reputation for curing skin diseases and rheumatism.

Espado Hot Sulphur Springs are three miles from Point Arguello.

Matilija Hot Springs are the most noted of any Ventura County springs. There are several of them in Matilija Cañon, fifteen miles from San Buenaventura and six miles from Nordhoff. Arrangements for transportation can be made with the Ojai Valley stage that leaves San Buenaventura daily.

There are comfortable accommodations and bathing facilities for a limited number of invalids.

Dr. R. E. Curran, of San Buenaventura, sends the following analysis of the Matilija springs water. The analysis of Matilija spring is copied from that made by J. W. Clarke, chief chemist of the United States Geological Survey:

Report of Analysis No. 727.—Water from Matilija Hot Spring, received from Dr. S. Bowers.

	Parts in 100,000.
Potassium chloride (KCl).....	62.2
Sodium chloride (NaCl) ...	1,387.6
Magnesium chloride (MgCl ₂).....	6.8
Magnesium sulphate (MgSO ₄).....	7.3
Calcium sulphate (CaSO ₄).....	16.0
Calcium carbonate (CaCO ₃).....	96.5
Calcium silicate (CaSiO ₃).....	62.9
Silica (SiO ₂).....	8.8
Total.....	1,648.1

Trace of hydrogen sulphide (H₂S) reported July 11, 1887.

The following is an analysis of water from one of the cold-water mineral springs on the Temescal Rancho, in the eastern part of Ventura County:

Carbonate of soda.....	0.771
Carbonate of lime	0.181

Carbonate of magnesia.....	0.054
Sulphate of soda.....	0.030
Sulphate of lime,.....	0.003
Sulphate of magnesia.....	0.764
Sulphide of sodium ..	0.203
Chloride of sodium...	3.218
Chloride of lithium.	A trace.
Hydrogen sulphide (free).....	2.046

There are cold sulphur springs about ten miles from San Buenaventura, on the Ojai Valley road.

Bulletin 32, United States Geological Survey, reports sulphur springs on the west side of San Fernando Peak, Ventura County.

APPENDIX.

LAND AND PRODUCTS.

It should be understood that the quotations for planting and cultivating orchards given in the following pages are subject to modification. The price of trees varies from year to year, and even during the same season, like that of any other product. The cost of preparing land depends very largely upon the character of the tract, whether it is level or uneven, clear, or covered with brush. The figures given must therefore be considered as only approximate.

In regard to the profits of horticulture, little is said here, as it is almost impossible to give figures of definite value on this subject. Too much of a misleading character has been printed already, arousing false hopes and resulting in disappointment. The profits of horticulture in Southern California are, under favorable conditions, very large—larger, probably, than those which are derived from the products of the soil in any other part of the world. They depend on so many varying conditions—such as the character of the soil, the care bestowed upon the orchard, the facilities of transportation, the taste displayed in packing, and the condition of the market—that it is, as stated, impossible to give definite figures that are applicable in every case, or can be taken as a rule. In a general way, it may be said that, under favorable conditions, a citrus orchard should, within from five to seven years of planting, yield a net profit of from one hundred to two hundred dollars per acre, increasing steadily from that time, and that a deciduous orchard should, within from three to five years of planting, net the owner

from fifty to one hundred dollars per acre, the profits also increasing steadily as the trees attain greater age.

The remarkable prosperity of Southern California, at a time when almost every section of the United States is suffering from depression, is mainly due to the character of its soil and climate, which permit the raising in large quantities of valuable crops that can be grown in few other sections of the country. It is only about a dozen years since hides and wool and tallow were the principal exports of the county. During this brief time the development of our agricultural resources has been truly wonderful.

Horticulture.

First in importance among the horticultural products of this section is the orange. The profits of orange-growing are large. The expenses of planting a grove and bringing it to bearing are considerable. First-class orange land, with ample water, costs from two hundred to four hundred dollars an acre. Orange trees planted on low, cold spots may do well for a few years, but when an extra cold spell comes they will suffer. Los Angeles County has about one fourth of the orange trees in Southern California. The fruit comes on the market from January to April, being later than the Florida crop. The most popular variety is the Washington Navel, which brings the highest price of any orange in the markets of the United States. The seedling sells for less money, but produces larger crops. The Mediterranean Sweet, St. Michael, Valencia Late, and Malta Blood are also largely grown. The best soil for oranges is a deep, rich, sandy, or gravelly loam, well drained. The best seasons for planting are spring and early summer, when the buds are starting. Budded trees are generally planted twenty-four feet apart, seedlings twenty-four to twenty-eight feet. Budded trees are considered in profitable bearing at five years from planting, and seedlings at eight. The crops increase steadily for at least fifteen years. A seedling at eight years will yield from three to five boxes of fruit and at fifteen years from ten to fifteen boxes. The orange tree lives and bears for centuries. The cost of trees is much less than it was a few years ago. The following estimate is made by a leading nurseryman of the cost of

planting a budded orange grove of ten acres and caring for it three years :

Trees (85 to an acre) at 35 cents.....	\$297.00
Preparing land and setting.....	90.00
Care per year, \$15 per acre.....	450.00
	<hr/>
Cost at end of three years.....	\$837.00

One man can care for twenty acres of bearing orange orchard. The necessary experience is easily acquired.

The chief orange-growing sections of Southern California are the San Gabriel and Pomona Valleys, and Whittier, of Los Angeles County, Riverside, and Redlands.

The lemon has been rapidly coming into favor among Los Angeles fruit growers during the past two or three years, since a proper method of curing the fruit has been introduced. Previously the fruit was allowed to ripen on the tree, and the skin in consequence became thick, causing an opinion to prevail among dealers that Southern California lemons were "no good." What has been said in regard to the orange applies also generally to the lemon. The tree requires a large supply of water. The cost of planting a lemon orchard is about the same as that of the orange. The tree begins to bear a little earlier, and the fruit can be gathered almost every month in the year. The Lisbon is the greatest favorite, followed closely by the Villa Franca and the Eureka. The curing of the lemon is a simple operation, consisting in storing the fruit on trays in a dark, well-ventilated room. They may be kept after being cured in this manner for six months or more. The fruit is generally supposed to do better near the ocean, although some prefer it farther inland. San Diego County is making a great specialty of the lemon.

No branch of horticulture has made greater progress during the past couple of years than olive culture. The olive can be grown in almost any part of Southern California. Trees are grown from cuttings taken in December or January and transferred to the open ground the following year after they are well rooted. Land suitable for olive culture can be bought at from fifty dollars to one hundred dollars an acre. The young trees for a ten-acre tract should not

cost more than one hundred and fifty dollars. The cost of planting an acre is somewhat less than with citrus fruits. Many imported varieties have been introduced. Some of these begin to bear within three years of planting. In about seven years the yield should be at least a gallon of oil to the tree. As much as two gallons of berries have been gathered from trees four years old. The yield goes on increasing for an indefinite time and the trees live for centuries. There is a good demand for the product, both in the shape of pickled olives and oil, and it will be a long time before the supply will equal the demand.

The fig has come into more general cultivation during the past few years, since the imported white varieties have superseded the black fig, which was planted by the Mission fathers. The fig bears very early and yields immense crops. It should be planted thirty to forty feet apart, which permits the culture of berries and root crops between rows until it is six or seven years of age. The tree bears a fair crop the third year and a full crop after the fifth year. A sandy loam is the best soil for the fig. Cuttings about six inches long are planted in sand and transplanted into nursery rows after rooting. The next year they can be planted in the orchard. The culture of this fruit is still in its infancy, as the method of drying it successfully is still in an experimental stage. There is a large home market for the product, imports from Smyrna exceeding five hundred thousand dollars a year. The cost of planting a fig orchard is about the same as that of an olive orchard. The tree is successfully grown throughout the county.

California prunes are rapidly displacing the imported article in Eastern markets. The fruit is largely grown in the Pomona and San Gabriel Valleys. The prune grows best in heavy sedimentary soil. Trees are planted from twenty to twenty four feet apart. The wider distance is better. After picking, the prunes are dipped in weak lye, dried, and graded according to their size. Land adapted to prunes can be bought at from fifty to one hundred and fifty dollars per acre. Trees can be purchased to-day at ten dollars per hundred. A grower estimates the following expenses: Preparing ground, \$5 per acre; planting, \$2.75 per acre; care and cultivation, \$7.50 per acre; pruning, \$1 the second year, \$2 the third year, and \$4 to \$5 the fourth year; spraying, 75 cents the second year, \$1 to

\$1.25 the third, and \$4 to \$5 the fourth. The profits of prune culture have been very large.

The apricot is a specialty of this section, which flourishes in few other parts of the world. The fruit is largely canned and dried. At four years from the planting the trees should yield from fifty to seventy-five pounds, and in six years about two hundred pounds. Sixty to eighty trees are planted to an acre. The cost of trees, preparing ground for orchard, and care after planting is about the same as for prunes.

The peach grows to perfection in Southern California, and the different varieties are gathered in great quantities during four months of the year. The trees bear very early, frequently yielding a considerable quantity of fruit the second year after setting out. Ten acres of seven-year-old trees have produced forty-seven tons of fruit. Expenses for planting are the same as for apricots and prunes.

The nectarine, a delicious fruit, grows under similar conditions to the apricot.

Apples do well in the higher mountain regions and near the coast. Good prices are always obtained for apples in this section. A yield of twenty-five tons from three acres of ten-year-old trees in Los Angeles County is reported, the fruit selling at three cents a pound. Apple trees one year from the bud are worth at present ten dollars per hundred. Expenses for planting and caring are the same as for other deciduous fruits,

Pears of many varieties succeed well. The Bartlett is a special favorite, and is shipped by the car load in a fresh state. Pear trees are worth fifteen dollars per hundred. Expenses the same as for other deciduous fruits. The trees are quite hardy in this section.

Many varieties of the grape are grown in this county, for table use and the manufacture of wines and brandies. Raisin grapes are raised along the foothills in the northern and eastern parts of the county with fair success, where the air is dry. For table use the Black Hamburg, Muscat, Champagne, and Flaming Tokay are favorite varieties. Some varieties ripen as late as November. For raisins the Muscat of Alexandria is grown. Usually about six hundred and eighty cuttings are planted to the acre. The cost of planting, irrigating, and two years' caring of a raisin vineyard is

about twenty-five dollars per acre. In three years the vineyard should yield fifty twenty-pound boxes of raisins per acre, in four years one hundred and fifty boxes, in five years two hundred boxes, and after that a small increase. The cost of cultivating per acre is fifteen dollars; curing and packing, forty cents per box. There are several large wineries in Los Angeles, Orange, and San Bernardino Counties, notably in the San Gabriel Valley, where wine and brandy of excellent quality are made.

The so-called English walnut is largely grown in Southern California, the headquarters of the industry being at Rivera, just south of Los Angeles City, from which point one hundred and thirty car loads of nuts were shipped last season. The tree needs deep, rich, naturally moist soil. The soft-shell variety, recently introduced, will bear a good crop in six years after planting. About twenty to twenty-five trees are planted to the acre. At maturity the trees should yield from eight to ten dollars worth of nuts each. Good walnut land is worth about one hundred dollars an acre. Other crops can be grown between the trees for several years after planting. The expense of setting out an orchard and caring for it does not differ materially from that of deciduous fruits.

The almond has not been so extensively cultivated in Los Angeles as in some other counties of the State. Of late a number of orchards have been planted in the Antelope Valley and are doing remarkably well, bearing early and large crops. The tree requires a light, well-drained soil and location removed from coast winds or fogs. The planting, cultivation, etc., are almost identical with the peach, which this tree very closely resembles in character. The tree bears in four years from planting.

Cherries have been little planted as yet, but they have been found to succeed in the more elevated valleys. The retail price rarely falls below ten cents per pound.

The guava is a delicious fruit, with a flavor like a cross between the strawberry and the black currant. It grows on bushes and has been hitherto generally planted between orchard trees. Guava jelly, made from the yellow variety, is celebrated the world over.

Strawberries and blackberries bear enormous crops in Southern California during many months of the year. They are sometimes grown between orchard trees. Around Azusa, in the San Gabriel

Valley, there are over a hundred and fifty acres of strawberries, and the shipments last season amounted to five hundred thousand pounds. Very fine berries are also raised between Los Angeles and Redondo, in the vicinity of Gardena, a few miles from the ocean. Berries are shipped to all parts of the country by express.

Among other fruits that are grown here on a limited scale are the Japanese persimmon, the loquat, or Japanese plum, and the pomegranate. The banana ripens in a few sheltered localities. It is not grown for the market. Melons yield enormous crops and fruit from early summer until late in the winter. Melons weighing a hundred pounds have been raised, and those weighing fifty pounds are common.

Potatoes, onions, cabbage, cauliflower, and celery are now shipped East in large quantities by the car load. The raising of winter vegetables in the frostless belts of the county is a profitable business. String beans, green peas, tomatoes, Chile peppers, and other vegetables are shipped at Christmas to the northern part of the State and to the East, commanding high prices, as much as thirty-five cents per pound being paid for string beans in San Francisco.

Pumpkins have been raised here that weigh three hundred and fourteen pounds; beets that weigh as much as the average man; radishes that tip the scales at seven pounds; mustard stalks over thirteen feet high, and elderberry "bushes" with trunks two feet in diameter. Sufficient peanuts to supply the home market are grown.

The beautiful pampas plume is cultivated and sold in large quantities for ornamental purposes. A lady near Whittier has twenty-eight acres of these plumes, grown between walnut trees.

A promising branch of the horticultural industry is the growing of seeds for the Eastern nurseryman, who finds seeds grown in this section superior to all others. Ladies have been very successful in this business.

Flowers of every variety grow profusely in the open air throughout the year. Several small attempts have been made to establish perfume factories, but the business has never been undertaken on a large scale. The shipment of cut flowers might be a profitable industry.

Although many of the grain fields of Southern California have been transformed into orchards, a large quantity of fine barley and wheat are still grown, new sections having been brought under cultivation in the northern part of the county. The quality of Southern California wheat is very fine. The varieties raised are principally White Russian, Defiance, and Scotch Fife. Some Australian wheat is also raised in San Fernando Valley. Cargoes of wheat are shipped from San Pedro and Port Los Angeles direct to Europe. A yield of thirteen hundred pounds to the acre is considered a good average. Wheat land is often rented, the man who takes the land paying from one fourth to one fifth of the crop, according to whether the land is bare or has buildings.

Barley is an important crop. In this section it takes the place of oats for feeding horses and cattle. Wheat and barley are never irrigated here.

Large quantities of wheat and barley are raised to be cut for hay while green. After a crop of barley hay has been harvested, yielding perhaps three tons to the acre, another crop of corn or potatoes is often raised on the same land.

Southern California corn is "hard to beat." The stalks sometimes grow to a height of over twenty feet, and a hundred bushels to the acre is not an extraordinary yield. Egyptian corn is grown as a fodder plant and as food for chickens.

Alfalfa, which is largely grown for hay, is a most valuable forage plant. Once planted, it needs little care, except plenty of water for irrigation after each cutting. Two crops may be cut the first year, and after the third year from three to six or more crops, yielding from one to two tons to the acre at each cutting. Animals are pastured in the fields and also given rations of cut hay.

Sugar beets have been raised with great success at Chino, in San Bernardino County, and it is probable that the culture of this crop will soon be introduced in Los Angeles County, where much of the soil is thoroughly adapted to the purpose. The season for making sugar here lasts four months or more, against fifty to sixty days in Europe.

Live Stock, Dairy, and Poultry.

Cattle are no longer raised in vast herds in this county, as they were in former years, the land having become too valuable for that purpose. Southern California now imports large quantities of cattle from other sections. The same is true in regard to sheep, which have been driven farther and farther back as cultivation has proceeded.

A great impetus has been given to the raising of hogs through the establishing in Los Angeles of a large pork-packing factory. Hogs eat alfalfa readily and are generally "finished off" with corn or barley. The greater part of the ham and bacon consumed here is still imported. From six to seven cents is paid for hogs on the foot at the Los Angeles packing house.

The dairy business has been greatly extended during the past few years. Good prices are always paid for butter and cheese. There are several cheese factories and room for more. An acre of alfalfa will supply four cows with green food the year round.

Poultry raising offers great inducements to industrious men of moderate means. Poultry does well here when given the same attention which it receives in the East. The price of fresh eggs rarely falls below twenty-five cents a dozen, while chickens bring six dollars a dozen.

The honey raised in this section is celebrated the world over, being shipped by the car load to the East and Europe. The hills abound with flowers and shrubs, from which the bees extract the honey. The business pays well in average seasons. The work is light and is especially adapted to men of moderate means who are in search of health as well as a living. The increase of swarms is very rapid.

Some effort has been made in the direction of silk culture, and silk of good quality has been produced. An exhibit of silk from this section has been made at the World's Fair.

Prices of Land.

Prices of land in Southern California are mainly influenced by water supply and distance from towns and communication. Land adapted to growing grain, root crops, alfalfa, and deciduous fruits,

without irrigation, may be had at from thirty to one hundred dollars per acre; land with water for irrigation, adapted to all varieties of deciduous fruits, at from one hundred to two hundred dollars, and first-class citrus land, with ample water right, at from two hundred to four hundred dollars. Good grazing land may be had in large quantities, in the mountains, at about ten dollars per acre, often with one or more springs. Some of this will be rocky and steep, but again there will be arable patches and sometimes timber. It should be remembered that the lowest-priced land is by no means always the cheapest, judged by what it will produce.

Land is now offered on very easy terms to actual settlers. Some may be had occasionally, without any cash payment, except interest, for ten years, on condition that trees are planted and improvements made. In this manner an industrious settler can commence with little cash; but for those who are determined to have low-priced land there is still plenty to be found. Back in the mountains relinquishments of Government claims, that include some good level land, may be bought for a few hundred dollars, sometimes with a shanty and other small improvements. The land seeker in Southern California should, at the start, abandon the idea of taking up Government land. The country has been raked over for such land, and what few hills are left are isolated and rugged. Five acres of level land with water, near a market, is far preferable to a quarter-section of such mountain land, from a financial—and still more from a social—standpoint.

Irrigation.

A mistaken idea prevails to some extent in the East that farming is only carried on in Southern California by means of irrigation, and that without it crops would be a failure. For all grains and winter crops irrigation is not employed. Corn is irrigated in some localities, being a summer crop, but is successfully grown in many places without irrigation. Upon some lands, after a crop raised without irrigation has been harvested, another is raised by means of irrigation. On irrigated land, two or three crops a year are frequently raised by alternating barley, hay, corn, and potatoes, or other crops.

Water for irrigation is obtained from rivers, from small mountain streams, and from artesian wells. The old conception of Southern California as a waterless land is being rapidly corrected. Tunnels are driven into the mountains and water is almost invariably struck in varying quantities. At other places mammoth dams have been constructed at suitable sites in the mountains, forming reservoirs to catch the winter rainfall, which would otherwise rush off to the ocean along the water courses, many of which are dry all summer. On the lowlands, flowing wells are obtained at depths varying from sixty to two hundred feet or more. They are quickly and cheaply bored by machinery. Some of these wells give a very large flow. Near Pomona, which is chiefly supplied with water from artesian wells, are over one hundred wells, of depths ranging from one hundred and fifty to one hundred and eighty feet.

If the farmer has an artesian supply on a high portion of his tract he is, of course, independent as to water. Otherwise the furnishing of water for irrigation, which involves a large outlay for tunneling, piping, and constructing reservoirs, is undertaken by companies. A recent Legislature passed a beneficent law known as the "Wright Act," permitting districts to organize and issue bonds, which can be sold for the purpose of constructing an irrigating system.

Where land is purchased in an irrigated section, the right to so much water—generally one inch to ten acres—is purchased with the land. Where the water right is purchased, the expense for keeping pipes and ditches in order, etc., runs from fifty cents to two dollars and a half per acre a year. The cost of water to purchasers per acre per year, in cases where the landowners do not own the water, varies from two dollars and a half to twelve dollars.

An Unbiased Opinion.

In an article on Land and Products, written for the first edition of this work by General Nelson A. Miles, U. S. A., who was formerly in command of the military department whose headquarters has since been removed from Los Angeles, that distinguished officer says :

"That Southern California will have an enormous population in the near future, goes without saying. With her immense resources,



GENERAL NELSON A. MILES, U. S. A.

being the only part of the United States that has a climate almost frostless, which permits of the growth of all the fruits, berries, vegetables, grapes, and nuts known, she will be called upon not only to supply the home consumption, most of which has been imported heretofore, but finally make it an important item in the export trade of our country by supplying nations with our canned fruits, wines, and raisins. That it will do so at some future day is not as wild a prediction as one would suppose, for at the present time the canned fruits of California are very much sought after in England, France, and other countries, where they obtain higher prices than the native product."

Petroleum in Southern California.

The petroleum and asphaltum supply of Southern California are among the largest and richest in the world. The peculiar feature of the oil wells of this section is their permanence. When oil is once struck in a well the proprietor can trust in its continuance. Petroleum and asphaltum were discovered here by the first Spanish settlers more than a century ago, but no attention was paid to the oil, while asphaltum was melted and used as roofing for the adobe houses of the settlers. The oil region of Southern California extends from the northern part of Santa Barbara County, along the coast through that county, thence a few miles inland through Ventura and Los Angeles Counties, a distance of one hundred and sixty miles.

Until the discovery last year of petroleum in paying quantities within the limits of Los Angeles city the producing oil wells of Southern California were confined to Ventura County, Newhall, in the northern part of Los Angeles County, and Puente, twenty miles east of Los Angeles.

Without any doubt the most important thing that has happened to Los Angeles since the beginning of the present year has been the development of the petroleum industry within the city limits. New wells have been sunk almost daily, until at present there are about three hundred wells within the city, the daily output of which approximates three thousand five hundred barrels.

The recent development in oil boring seems to point more and more directly to the probability that the local oil belt extends in a

southwesterly and northeasterly direction, from the neighborhood of Westlake Park toward the Highland Park region, northeast of the city limits. The wells which have been drilled so far south of First Street have not been successful, with the exception of a couple of wells on the Belmont grounds, at the westerly end of First Street, which would come within the belt indicated from southwest to northeast, and it is said that even these wells are not entirely satisfactory.

You can buy oil at the wells, if you will haul it yourself, at as low a price as forty cents a barrel, or perhaps even a shade less. The regular price of oil, delivered to consumers, may be quoted at from sixty-five to seventy-five cents. If, however, you desire to make a contract for a year or more, you may find it difficult to obtain oil delivered at the lower figure named above, while in some cases contracts have been made at the rate of one dollar a barrel. The fact is that at present the facilities for marketing the oil product are incomplete, and small producers who find themselves pressed for money are forced to dispose of their product at the best price they can get. At the same time there are very few among the oil men who do not have faith in the future of the market, and this is why they refuse to make contracts at the present rate. One pipe line has been completed, and is in working order. Two other franchises for pipe lines have been granted by the Council. What is specially needed in the local oil industry at present is a pipe line which will act as a common carrier, charging a reasonable rate to deliver oil at the tanks.

At eighty cents a barrel, reckoning three barrels and a half of oil to be equal to a ton of coal, the fuel supply of Los Angeles would cost only as much as in places where they pay two dollars and eighty cents a ton for coal, which would place Los Angeles in the lead among the manufacturing cities of the country, as far as the cost of fuel is concerned. There are some who estimate that three barrels of Los Angeles oil are equivalent to a ton of coal, but even reckoning three and a half barrels, and figuring the cost of oil at one dollar, it would be only three dollars and fifty cents per ton for coal, which is a price low enough to attract manufacturers from all parts of the country. The Terminal Railway is using oil on most of its engines. The Southern California Railway is using oil on about

twenty per cent of its locomotives, and is taking steps to transform the balance into oil-burning engines. A tank steamer is being constructed in San Francisco to carry oil from Ventura to that city, and as soon as the supply warrants it, a pipe line will be constructed from Los Angeles to the ocean, and oil shipped to the northern part of the State. In this manner Los Angeles oil could be laid down in San Francisco at a price which would force the leading manufacturers of that city to use it, or they would not be able to compete. In addition to the railroad companies mentioned above, the Southern Pacific Company has indicated its intention of using oil on their branch lines here and in the northern part of the State. The cable and electric railway systems of San Francisco have also intimated their willingness to use this fuel, and the Coast Steamship Company is preparing to investigate the question.

In course of time refineries will undoubtedly come, to work up the crude product. One has already been established on a small scale in the city, and has met with much success. It is expected that before long a distillate will be placed on the market, suitable for burning in kitchen ranges, which may be sold at a price that will cause it to be generally adopted in place of refined coal oil and gasoline. There are quite a number of other useful articles that are manufactured from crude petroleum. In the refinery in Santa Paula, in Ventura County, more than twenty different articles are manufactured, including lubricants, paints, printing ink, and water-proofing. Such articles can be shipped at a profit to all parts of the world, and the demand for them is practically unlimited.

While the Los Angeles oil is not suitable for illuminating purposes, having an asphalt base instead of a paraffin base, like the Pennsylvania oils, it is declared by experts to be one of the best fuel oils that has yet been discovered. It is true that in some of the wells the oil is of very low specific gravity, that tends to clog up furnaces, but this difficulty can be obviated by mixing with lighter oils. In the wells that have recently been drilled at the western end of the belt the grade of the oil is considerably higher, and at the same time the yield is larger. Experience seems to show that the oil in the second, or lower stratum, which only a few of the wells have reached, is of uniformly better quality than that nearer the surface. The average depth of the producing wells within the

city is about eight hundred and fifty feet. Only a few have been drilled to a depth of a thousand feet or more, and these have generally struck good oil in large quantities. It is evident that the development of this kind has but just commenced, and no one can venture to prophesy what six months of prospecting may bring forth. One fact has been conclusively proved, which is that the local deposit must be something more than a mere pocket, as some persons supposed when the oil was first struck. There must, indeed, be a very large deposit of oil here to maintain so many wells within a limited area, the derricks almost touching each other, within three or four blocks of the city—something that has never been attempted before in any oil field.

The importance of this great development to the material prosperity of Los Angeles can scarcely be overestimated. From being a place where the manufacture of staple articles was rendered difficult, if not impossible, by the high cost of fuel, coal costing about ten dollars per ton, Los Angeles has jumped at one bound to a position of equality with the most favored manufacturing cities of the country. Already many inquiries have been received from manufacturers of the East, who have heard of these developments, and it is not too much to predict that the present year will mark the commencement of a manufacturing era in the history of Los Angeles. There are some to whom this prospect is not a pleasant one. They object to seeing the beautiful City of the Angels defaced by tall smokestacks. It should, however, be remarked that the lay of the land in Los Angeles is such that a factory section may be located very easily where it will not inconvenience the leading residence sections of the city. The lowlands along the river, near the railroad tracks, are destined to become the manufacturing section of Los Angeles, and the direction of the prevailing winds is such that any fumes from the factories will be carried away from the west, southwest, and south, where the chief residence sections are. Then, besides this, with the rapid development of transportation facilities through the general introduction of electricity, city residents may have a dozen attractive sections to choose from within twenty minutes' ride of their places of business. Manufacturing brings money, and with plenty of money in circulation a majority of the citizens of Los Angeles will be in a position to acquire attractive suburban homes.

RAILWAY TABLES.

STATIONS ON THE SOUTHERN PACIFIC RAILWAY.

Distances are given from Los Angeles, with altitude of stations above sea level.

To Colton, San Bernardino, Redlands, and Riverside.

Station.	Miles.	Elevation.
Los Angeles.....	..	....
Arcade Depot.....	0	278
First Street.....	..	....
Commercial Street....	1	....
Naud Junction.....	..	....
Shorb.....	7	....
Alhambra.....	8	425
San Gabriel.....	9	409
East San Gabriel.....	10	380
Savanna.....	12	296
Monte.....	13	286
Puente.....	19	323
Lemon.....	25	516
Spadra.....	29	705
Pomona.....	33	857
Ontario.....	39	981
Chino.....	45	716
Cucamonga.....	42	952
South Etiwanda.....	46	....
Sansevain.....	49	1,060
Bloomington.....	53	1,083
Colton.....	58	965
Redlands Junction....	63	1,136
Redlands.....	66	1,150
Eastberne.....	..	....
Crafton.....	70	1,570
Brookside.....	65	1,310
El Casco.....	72	1,674
Beaumont.....	81	2,500
Banning.....	87	2,317
San Bernar- } <i>Motor</i>		
dino..... } <i>via</i>	62	1,075
Riverside... } <i>Colton.</i>	66	875

To Santa Monica.

Station.	Miles.
Los Angeles.....	0
River Station.....	2
Commercial Street.....	1
First Street.....	1/2

Station. Miles.

Arcade Depot.....	0
Winthrop.....	4
University.....	5
Ivy.....	10
The Palms.....	12
Home Junction.....	0
Soldiers' Home.....	14
Santa Monica.....	17
Santa Monica Cañon.....	19
Port Los Angeles.....	20

To Santa Barbara.

Station.	Miles.	Elevation.
Los Angeles.....	..	278
Arcade Depot.....	..	....
First Street.....	..	....
Commercial Street....	1	....
River Station.....	2	....
Tropico.....	6	427
Burbank.....	11	461
Pacoima.....	19	....
Fernando.....	21	1,066
Newhall.....	30	1,265
Saugus.....	32	1,159
Castaic.....	37	1,004
Camulos.....	48	733
Piru.....	50	695
Buckhorn.....	52	593
Fillmore.....	57	475
Sespe.....	60	450
Santa Paula.....	67	286
Saticoy.....	74	146
Montalvo.....	78	89
San Buenaventura....	83	45
Carpenteria.....	100	8
Santa Barbara—		
Chapala Street.....	110	3
Victoria Street.....	112	0
Hopevale.....	116	116
Goleta.....	118	19
La Patera.....	121	4
Elwood.....	124	93

To San Pedro and Long Beach.

Station.	Miles.
Los Angeles.....	0
River Station.....	2
Commercial Street.....	1
First Street.....	1½
Arcade Depot.....	0
Florence.....	5
Lynwood.....	9
Compton.....	10
Thenard.....	18
Long Beach.....	22
Alamitos Beach.....	0
Wilmington.....	20
San Pedro.....	22

To Whittier, Santa Ana, and Tustin.

Station.	Miles.
Los Angeles.....	0
River Station.....	2
Commercial Street.....	1
First Street.....	0
Arcade Depot.....	0
Florence.....	5
Vinvale.....	9
Downey.....	11
Studebaker.....	14
Fulton Wells.....	16
Los Nietos.....	17
Whittier.....	20
Studebaker.....	14
Norwalk.....	15
Carmenita.....	18
Buena Park.....	21
Brookhurst.....	23
Anaheim.....	25
Miraflores.....	27
Orange.....	30
Santa Ana.....	32
Miraflores.....	27
Marlboro.....	30
McPherson.....	34
El Modena.....	35
Tustin.....	38

To Monrovia.

Station.	Miles.
Arcade Depot.....	0
First Street.....	0
Commercial Street.....	1
Naud Junction.....	0
Shorb.....	7
North Alhambra.....	9
North San Gabriel.....	12

Station.	Miles.
Sunny Slope.....	13
Arcadia.....	16
Monrovia.....	18

To Chatsworth Park.

Station.	Miles.	Elevation.
Los Angeles.....	..	....
River Station.....	1	293
Tropico.....	4	427
West Glendale.....	6	....
Burbank.....	9	461
Lankershim.....	13	628
Reseda.....	22	742
Canoga.....	26	788
Chatsworth Park.....	30	928

To San Francisco.

Station.	Miles.	Elevation.
Los Angeles.....	..	....
Arcade Depot.....	0	278
River Station.....	2	....
Tropico.....	6	427
Burbank.....	11	461
Fernando.....	22	1,066
Newhall.....	30	1,265
Saugus.....	32	1,265
Lang.....	44	1,681
Ravenna.....	54	2,262
Acton.....	57	2,670
Palmdale.....	69	2,822
Lancaster.....	78	2,350
Mojave.....	101	2,751
Tehachapi.....	120	4,025
Bakersfield.....	169	415
Tulare.....	232	282
Goshen Junction.....	242	286
Fresno.....	276	293
Collis.....	291	....
Tracy.....	417	....
Berenda.....	305	256
Merced.....	331	171
Modesto.....	368	91
Lathrop.....	388	26
Tracy.....	399	....
Byron.....	414	34
Port Costa.....	..	....
Oakland Pier.....	478	14
San Francisco.....	482	12
Stockton.....	395	....
Sacramento.....	455	....

To El Paso and New Orleans.

Station.	Miles.	Elevation.
Los Angeles.....	0	278
Banning.....	87	2,317
Cabazon.....	93	1,779
Palm Springs.....	107	534
Indio.....	130	*20
Salton.....	154	*263
Volcano Springs.....	179	*225

* Below sea level.

Station.	Miles.	Elevation.
Yuma (Arizona).....	249	140
Gila Bend.....	372	737
Maricopa.....	387	1,173
Tucson.....	497	2,390
Benson.....	543	3,578
Deming (N. M.).....	716	4,334
El Paso.....	804	3,717
San Antonio.....	1,439	686
Houston.....	1,655	64
Lafayette.....	1,870	51
New Orleans.....	2,015	0

STATIONS ON THE SOUTHERN CALIFORNIA RAILWAY.
(SANTA FÉ SYSTEM.)*To Barstow.*

Station.	Miles.
Los Angeles.....	0
Downey Avenue.....	2
Morgan.....	3
Highland Park.....	5
Seco.....	5
Garvanza.....	6
Lincoln Park.....	7
South Pasadena.....	8
Raymond.....	9
Pasadena.....	10
Los Robles Avenue.....	11
Olivewood.....	11
Fair Oaks.....	12
Lamanda Park.....	13
Chapman.....	15
Santa Anita.....	16
Arcadia.....	17
Monrovia.....	19
Duarte.....	21
Azusa.....	25
Glendora.....	27
San Dimas.....	31
ordsburg.....	33
North Pomona.....	35
Claremont.....	36
North Ontario.....	40
North Cucamonga.....	44
Rochester.....	46
Etiwanda.....	49
Rosena.....	52
Rialto.....	56
San Bernardino.....	60
Highland Junction.....	62

Station.	Miles.
Verdemon.....	68
Keenbrook.....	75
Cajon.....	79
Summit.....	86
Hesperia.....	96
Victor.....	105
Oro Grande.....	110
Point of Rocks.....	120
Cottonwood.....	129
Barstow.....	141

To Santa Monica and Redondo.

Station.	Miles.
Downey Avenue.....	0
Los Angeles.....	0
Ballona Junction.....	2
Nadeau Park.....	5
Central Avenue.....	6
Slauson.....	7
Wildeson.....	8
Hyde Park.....	10
Centinela.....	11
Inglewood.....	12
Wiseburn.....	16
Arena.....	18
Redondo Beach.....	22
Inglewood.....	12
Mesmer.....	14
Machada.....	17
Ocean Park.....	20
Santa Monica.....	20.7

<i>To San Diego.</i>		Station.	Miles.
Station.	Miles.	Pachappa.....	66
Los Angeles.....	0	Riverside.....	69
Ballona Junction.....	2	East Riverside.....	72
Manhattan.....	3	Colton.....	76
Bandini.....	7	San Bernardino.....	79
Rivera.....	10		
Los Nietos.....	12	<i>Around the Loop—San Bernardino</i>	
Santa Fe Springs.....	13	<i>to Redlands, etc.</i>	
La Mirada.....	18	Station.	Miles.
Northam.....	19	San Bernardino.....	0
Fullerton.....	24	E Street.....	1
Anaheim.....	27	Kehls.....	2
Orange.....	32	Victoria.....	5
Santa Ana.....	34	Drew.....	6
Aliso.....	36	Gladysta.....	7
Irvine.....	42	Redlands.....	9
Modjeska.....	45	Eastberne.....	10
El Toro.....	47	Crafton.....	11
Capistrano.....	56	Mentone.....	12
San Juan.....	59	Aplin.....	14
San Onofre.....	68	East Highland.....	16
Las Flores.....	77	Base Line.....	17
Oceanside.....	85	Molino.....	18
Carlsbad.....	88	Highland.....	19
Minneapolis.....	90	Asylum.....	20
La Costa.....	93	Del Rosa.....	22
Merle.....	95	Valencia.....	23
Encinitas.....	97	Arrowhead.....	24
Del Mar.....	103	Highland Junction.....	25
Sorrento.....	108	San Bernardino.....	27
Linda Vista.....	112		
Selwyn.....	113	<i>Oceanside to Fallbrook.</i>	
Ladrillo.....	118	Station.	Miles.
Moreno.....	121	Oceanside.....	0
Old Town.....	123	Ysidora.....	7
San Diego.....	126	Ranch House.....	11
Twenty-second Street.....	128	De Luz.....	15
National City.....	132	Fallbrook.....	20
<i>To Riverside and San Bernardino,</i>		<i>Oceanside to Escondido.</i>	
<i>via Orange.</i>		Station.	Miles.
Station.	Miles.	Oceanside.....	0
Los Angeles.....	0	Escondido Junction.....	1
Anaheim.....	27	Loma Alta.....	7
Orange.....	32	Vista.....	10
Olive.....	35	Buena.....	14
Yorba.....	38	San Marcos.....	16
Gypsum.....	44	Richland.....	19
Rincon.....	51	Escondido.....	22
South Riverside.....	55		
Alvord.....	59		
Arlington.....	62		
Casa Blanca.....	65		

San Bernardino to San Jacinto and Temecula.

Station.	Miles.	Station.	Miles.
San Bernardino.....	0	Menifee.....	31
Colton.....	3	Winchester.....	35
East Riverside.....	7	Egan.....	39
Box Springs.....	14	Hemet.....	42
Alessandro.....	17	San Jacinto.....	44
Val Verde.....	20	Perris.....	25
Perris.....	25	Elsinore.....	30
		Wildomar.....	41
		Murrieta.....	46
		Linda Rosa.....	48
		Temecula.....	51

STATIONS ON THE LOS ANGELES TERMINAL RAILWAY.

*Distances are given from East San Pedro.**To Long Beach and East San Pedro.*

Station.	Miles.
East San Pedro.....	0.0
Terminal Island.....	1.1
Long Beach.....	5.6
Alamitos Beach.....	6.5
Signal Hill.....	8.6
Bixby.....	11.0
South Clearwater.....	15.0
Clearwater.....	15.7
County Farm.....	17.5
Workman.....	18.1
Nadeau.....	20.7
Bells.....	22.3
Fruitland.....	23.6
Manhattan.....	24.5
Los Angeles.....	27.5

To Pasadena and Altadena.

Station.	Miles.
Los Angeles.....	27.5
Downey Avenue.....	29.2
Glendale Junction.....	30.3
F Street.....	31.0
Sycamore Grove.....	31.6
Highland Park.....	32.1
Santa Fé Crossing.....	32.9
Garvanza.....	33.5
Lincoln Park.....	34.2
Wyatt.....	34.9
South Pasadena.....	35.1
Fair Oaks.....	35.3
Raymond.....	36.0
California Street.....	36.7
Pasadena.....	37.4
Mentone.....	38.6
Painters.....	39.6
Arroyo Park.....	40.3
Los Casitas.....	41.5
Mountain View.....	42.1
Marengo.....	42.5
Santa Rosa.....	42.8
Altadena Junction.....	43.1

To Verdugo Park.

Station.	Miles.
Glendale Junction.....	30.3
Three-Mile House.....	31.7
Hunters.....	32.3
Ronds.....	32.8
Glassell.....	33.2
Mitchells.....	33.7
Tropico.....	34.5
Glendale.....	35.7
Verdugo Park.....	37.4

RATES TO CALIFORNIA.

The rate to California averages eighty dollars for a first-class ticket from New York to Los Angeles or any other Pacific-coast point. Some of the roads charge a dollar or two more, and some a trifle less. This rate is for a limited ticket. The purchaser is not allowed to stop over.

There is also a ticket, costing about ninety-five dollars, that allows the passenger to stop as he pleases between New York and the Pacific coast within thirty days.

The railroads also sell round-trip tickets, first class, which are good for nine months, for one hundred and forty-eight dollars. There is also a second-class ticket which costs sixty-six dollars and fifty cents.

The rates from Kansas City, Chicago, St. Louis, and New Orleans are from twenty to twenty-five dollars less than rates quoted from New York. The Pacific Mail Steamship Company sells tickets *via* the Isthmus of Panama for one hundred and twenty dollars. This trip by water takes twenty-eight days.

Railway rates on roads in California are usually from three to four cents per mile.

HOTELS OF SOUTHERN CALIFORNIA.

Alhambra, Los Angeles County: Alhambra.

Anaheim, Los Angeles County: The Planters'.

Beaumont, San Bernardino County: The Highland House.

Burbank, Los Angeles County: The Burbank.

Colton, San Bernardino County: Transcontinental, Davis, Colton.

Del Mar, San Diego County: The Del Mar.

Downey, Los Angeles County: The Central.

Fullerton, Los Angeles County: The Winchester.

Garvanza, Los Angeles County: Garvanza Park.

Glendale, Los Angeles County: The Glendale.

Los Angeles, Los Angeles County: The Westminster, The Hollenbeck, Nadeau, St. Elmo, The Arcad, Natick, Jerry Illich's, The California, The Livingstone, The Lilly, The Plaza Vista, Argyll,

Bellevue Terrace, The Orland, Clifton, The Brunswick, Norwood ; many private boarding houses.

Long Beach, Los Angeles County : Long Beach Hotel ; numerous boarding houses.

Lugonia, San Bernardino County : Terrace Villa.

Monrovia, Los Angeles County : Grandview.

Newhall, Los Angeles County : Southern.

North ft. Ventura County : Ojai Valley House, Oak Glen Cottages.

Oceanside, San Diego County : Oceanside.

Ontario, San Bernardino County : Ontario.

Orange, Los Angeles County : Palmyra, Rochester.

Pasadena, Los Angeles County : The Green, The Painter, Carlton, Acme, Los Angeles ; many private boarding houses.

Pomona, Los Angeles County : Palomares.

Riverside, San Bernardino County : The Glenwood Tavern, The Rowell ; private boarding houses.

San Buenaventura, Ventura County : Santa Clara House, Palace, Occidental ; Rose Hotel.

Santa Barbara, Santa Barbara County : Arlington, San Marcus, Occidental, Commercial, and many private boarding houses.

San Bernardino, San Bernardino County : Stewart, Southern, Starkey, St. Charles.

San Diego, San Diego County : Coronado, St. James, Florence, Horton, and many boarding houses.

Santa Ana, Los Angeles County : Brunswick, Taylor, Lacy.

Santa Fé Springs, Los Angeles County : Santa Fé Springs Hotel.

Santa Monica, Los Angeles County : Arcadia, Santa Monica, and many boarding houses.

South Riverside, San Bernardino County : South Riverside.

South Pasadena, Los Angeles County : South Pasadena.

Whittier, Los Angeles County : The Lindley.

NOTE.—Besides authorities mentioned in the text of this book, the author of Part II has made liberal use of the files of the Daily Times, Daily Herald, Daily Express, and of the Rural Californian, all of Los Angeles ; of the San Diego Sun and Union ; of the Riverside Daily Press ;

of the San Bernardino Times, Index, and Courier; of the Pasadena Union and Star; of the Ventura Free Press; of the Santa Barbara Daily Press and Daily Independent, and of the Pomona Progress. He has also quoted liberally from the following works: Santa Barbara as it is, by Mary C. F. Hall-Wood; History of Los Angeles County, by J. Albert Wilson; History of Santa Barbara and Ventura Counties, by Jessie D. Mason. The numerous pamphlets that have been issued about Southern California, especially those published by the Los Angeles Chamber of Commerce, have been of great use to him. The Land of Sunshine, a beautiful magazine published in Los Angeles, has also been of value.

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